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## INTRODUCTION

In the past this publication has been devoted exclusively to abstracts of doctoral dissertations, available in complete form as microfilm or paper enlargements. Beginning with Volume VI Number 2 was initiated a departure from this policy; the inclusion of abstracts of longer monographs of merit, in addition to dissertations.

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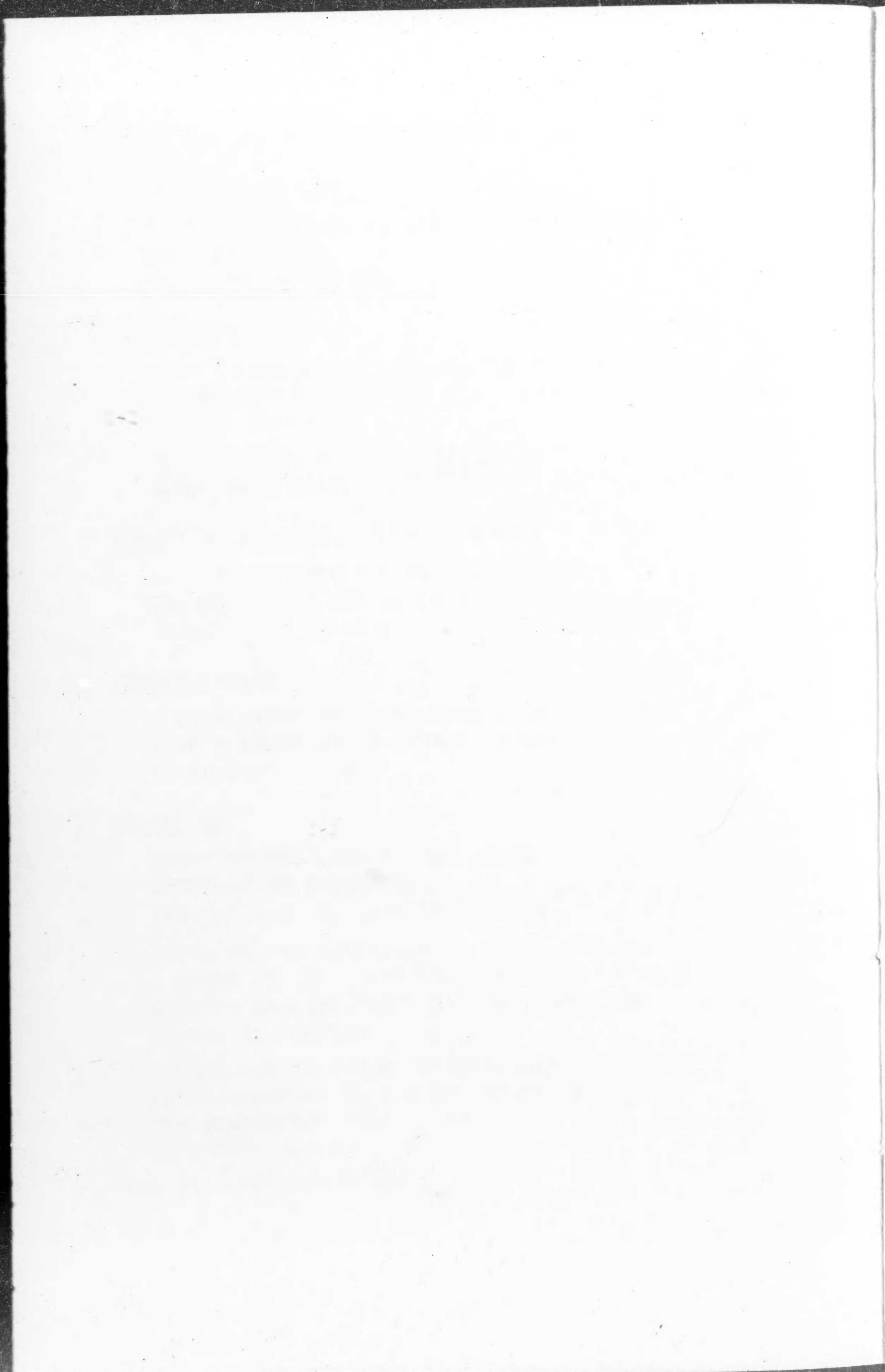
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Part I

DISSERTATIONS



## ART

### LATER CORINTHIAN POTTERY

Mary Thorne Campbell, Thesis (Ph.D.)  
Bryn Mawr College, 1941

It has long been known from ancient literature and from excavation that Corinth was a flourishing city for many generations after the period of its greatest prosperity in the field of pottery, but only comparatively recently has material from closed deposits been sufficient for us to reconstruct some of the later history of the ceramic industry in that centre.

Although enough material is not as yet available for a definitive study of Corinthian pottery after the middle of the sixth century B. C., at least some foundation for further research on this subject can now be laid and it was with such research in mind that this project was undertaken.

The Corinthian vases of later date coming from excavations or deposited in museums have been collected as far as possible, the origin and history of the older shapes traced and the new styles and shapes noted. As a result certain facts have become apparent. Certainly Corinthian kilns continued to produce large quantities of pottery and not only did the potters reproduce the old types of wares, but, in tune with the changing times, copied the wares of other cities, notably Athens, and also developed designs and shapes of their own.

Figure painting did not cease with the end of the "orientalizing" period but Corinthian artists turned to imitations, first of Attic black-figured and later of Attic red-figured vases. Although the samples we have cannot be compared with the works of Attic masters of the first order, individual painters can be identified and the fine quality of the Pentaskouphia tablets suggests that in time vases of

better quality may be found.

Vases in the "conventionalizing" style continued to be made in large quantities but tended to become more and more linear in design. Black-glazed pottery was very popular too and many new shapes are to be found, some peculiar to Corinth, others obviously copied from Attic works. It is here that the later Corinthian potters seem to show the greatest inventive power. Partly glazed and unglazed vases as well as kitchen and coarse wares also have a definite development in shape and style and though not as prepossessing in appearance as the other wares they nevertheless have their place.

This later Corinthian pottery is of interest not only for the role it plays in the industrial life of Corinth but much more for its value in dating deposits and thereby countless other vases and monuments. When a more complete picture of the history of later Corinthian pottery is possible, it should be invaluable in furthering the reconstruction of the life of Corinth in the later Greek period. This study has been made in an attempt to provide a foundation for more comprehensive studies.

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BIOLOGICAL CHEMISTRY

THE ENZYMATIC DEPHOSPHORYLATION OF  
RIBONUCLEIC ACID  
A STUDY OF SOY BEAN NUCLEASES

Max Schlamowitz, Thesis (Ph.D.)  
University of Michigan, 1946

Forty per cent glycerol extracts of the soy bean (*Glycine hispida*, var. Manchu) contain an enzyme system which hydrolyzes ribonucleic acid and releases the phosphorus of this substrate as inorganic phosphate. The activity of extracts of sprouted beans is greater than that of similarly prepared extracts of dormant beans. The ribonuclease system is made up of at least two enzymes, a ribonucleinase and a monophosphatase. The activity of the ribonucleinase was demonstrated by determination of the increases in acid-soluble, organically bound phosphorus in the products of enzymatic activity. This enzyme was separated from the monophosphatase and by a process of vacuum concentration and repeated precipitations with ammonium sulfate has been obtained in a partially purified but highly active state. The enzyme is stable in acid and is relatively resistant to inactivation by heat. It is apparently a protein of the albumin type. The monophosphatase has not been thoroughly investigated but it has been demonstrated that it is a thermolabile, acid sensitive protein. It is apparently unable to attack ribonucleic acid but it releases readily phosphoric acid from the products of ribonucleinase action on this substrate.

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THE SYNTHESIS AND INTERMEDIARY METABOLISM OF SOME  
SULFUR ANALOGUES OF CYSTINE: ISOCYSTEINE

William J. Wingo, Thesis (Ph.D.)  
University of Michigan, 1946

At 28° in the presence of nitrous acid under conditions similar to those of the Van Slyke amino nitrogen determination, the sulfur of isocysteine is oxidized to sulfate at approximately the same rate as is that of cystine.

The sulfur of isocysteine is not oxidized by rabbits to which the amino acid is given either orally or subcutaneously. The extra sulfur excreted in the urine subsequent to such administration is present almost entirely in organic combination; 75-81 per cent of this organic sulfur is in the form of a disulfide which gives the Fleming-Vassel but not the Sullivan test, and which therefore contains an amino and a sulfur group on adjacent carbon atoms but is not cystine.

Isocysteine does not promote the growth of young white rats when fed as a supplement to a cystine-deficient diet as does cystine.

The results of the animal experiments indicate that isocysteine is not utilized by the animal organism. It may be that the sulfur of isocysteine cannot be oxidized by the body unless the compound is first deaminized; since  $\beta$ -amino acids are resistant to enzymatic deamination, this may explain the results observed.

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## BOTANY

### THE ACTION OF ALLELIC FORMS OF THE GENE $A_1$ IN MAIZE

John R. Laughnan, Thesis (Ph.D.)  
University of Missouri, 1946

The  $A_1$  alleles determine the presence of varying amounts of purple and brown pigments. A B Pl plants are pigmented deep purple in most external tissues while aa B Pl individuals are brown and without anthocyanin. Various other alleles are distinct in their determinations of phenotypes intermediate between these two extremes. The present report concerns a chemical investigation of the pigments affected by  $A_1$  action and a study of the variability dosage and dominance relations of a number of  $A_1$  alleles.

#### Chemical Investigations

Chemical studies carried out with extracts of husks from brown, aa B Pl plants have established the presence of at least five, chemically distinct pigments. The latter are phenolic in nature, retain considerable brown color in acid solutions and are absent in purple A B Pl plants. A method ("phase test") is described which separates these brown pigments in the original extract from a bright yellow layer. By the use of modified "phase tests" coupled with spectrographic absorption determinations two yellow pigments, colorless in acid solutions, having the properties of flavonols and distinct from the brown pigments have been identified in this layer. One of these, Flavonol II, is identical in its absorption properties with isoquercitrin; the other, Flavonol I, remains structurally unidentified. Quantitative determinations suggest that Flavonols I and II, as in the case of the brown pigments, are affected by the single gene substitution at the  $A_1$

locus; both are present in significantly greater amounts in husk tissue extract of brown aa B Pl plants than in that of purple A B Pl plants.

Extracts of purple husks of A B Pl plants contain at least two purple pigments in addition to the anthocyanin, chrysanthemin. There are indications of others from preliminary studies. The purple pigments are distinct from the brown and yellow pigments and are absent in husk extracts of aa B Pl plants.

The A gene thus affects the synthesis of a relatively large number of related chemical substances. It appears from the present study that there is little basis for the generally accepted view that the action of this gene is concerned with a simple oxidation-reduction step which makes the difference between isoquercitrin and chrysanthemin.

#### Genetic Investigations

On the basis of differences in pigmentation in the aleurone, pericarp and vegetative regions of plants in sib cultures, seven distinct levels of action have been recognized for the alleles of the A<sub>1</sub> series which were studied. The classes of alleles corresponding to these levels of action in the order of decreasing effect with respect to pigment production in these tissues are: A-(st) A<sup>rb</sup> A<sup>b</sup>, A<sup>br</sup> a<sup>P</sup>-(D1), a<sup>P</sup>-(U1), a<sup>P</sup>-(31) a<sup>P</sup>-(41) a<sup>P</sup> a. The studies on dosage and dominance reveal further differences between alleles within these classes.

Dosage experiments in which X-ray deficiencies were employed have shown cumulative action of the alleles a<sup>P</sup>-(D1) and a<sup>P</sup>-(U1) in both plant and aleurone tissue and of A<sup>br</sup> in plant tissue, two doses of these alleles producing more anthocyanin and less brown pigment than one dose. The alleles a<sup>P</sup>, a<sup>P</sup>-(41) and a<sup>P</sup>-(31), however, have repeatedly failed to exhibit a dosage effect in either plant or endosperm tissue, even though the concentration of purple pigment produced by these types is far below the

saturation level. Analogous experiments using recessive a in place of a deficiency yielded results comparable in all respects to those from gene dosage studies; in this background a<sup>P</sup>-(D1) and a<sup>P</sup>-(U1) show a lack of complete dominance over recessive a whereas a<sup>P</sup>, a<sup>P</sup>-(41) and a<sup>P</sup>-(31) are completely dominant to a.

Compounds of either of the alleles a<sup>P</sup>-(D1) and a<sup>P</sup>-(U1), which are associated with intermediate plant and brown pericarp color, with types such as A-(st) show complete dominance of the latter; these compounds are deep purple in plant phenotype and develop red pericarp color. The alleles a<sup>P</sup>, a<sup>P</sup>-(41) and a<sup>P</sup>-(31), which likewise are associated with brown pericarp color and intermediate plant and aleurone color, behave quite differently in combinations with the red-pericarp, purple types; such compounds always have less anthocyanin and more brown pigment than the purple types with which the combination was made, and in addition show complete dominance of the brown pericarp effect of the "intermediate" alleles. The allele A<sup>b</sup> is also antimorphic in its pericarp color effect; in compounds with A-(st) and other alleles having a red pericarp color effect, the brown color effect of A<sup>b</sup> is completely dominant.

The divergent action characteristic of the alleles of South American origin (a<sup>P</sup>, a<sup>P</sup>-(41), a<sup>P</sup>-(31) and A<sup>b</sup>) is not explained on the basis of a simple hypothesis of gene action which pictures the A<sub>1</sub> alleles as concerned with different degrees of transformation of a cellular substrate to a product essential for the formation of anthocyanin, nor are the data satisfied by either of the modifications of such a simple hypothesis proposed by Wright and elaborated by Stern to account for various antimorphic effects of genes.

A new hypothesis of gene action is considered; the data are brought into agreement by assuming that the alleles of South American origin further the synthesis of both brown and red pigment from a common

cellular substrate while the remaining alleles, of North American origin act to convert the cellular substrate into a single product which is a precursor of anthocyanin.

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## CHEMISTRY

### THE DETERMINATION OF CALCIUM AS OXALATE BY THE USE OF UREA AND FORMIC-FORMATE BUFFER

Frank S. Chan, Thesis (Sc.D.)  
University of Michigan, 1933

The nature of calcium oxalate precipitated from a calcium solution depends to a great extent on the method of precipitation. It was found that coarse-grained calcium oxalate can be obtained by hydrolysis of urea in an acid solution containing calcium ions and oxalate ions. Under proper conditions, such precipitates can be easily filtered and washed and are not too coarse to cause any difficulty in subsequent rapid ignition to calcium carbonate.

In the presence of magnesium, T. W. Richards stated that a single precipitation of calcium oxalate will give accurate results if the hydrogen ion concentration is decreased slowly and uniformly in the solution. By the slow hydrolysis of urea such conditions can be readily accomplished. Various conditions for the precipitation of calcium ions in a solution containing magnesium ions were investigated. The results are briefly summarized.

(1) With 0.80g. of magnesium oxide in 420 ml. solution, containing 0.5330g. calcium carbonate, the weight of magnesium oxalate in the calcium oxalate varies with the time of standing--the longer the time of standing the greater the contamination with magnesium oxalate.

(2) Under similar conditions, an increase of magnesium ions will prevent the complete precipitation of calcium ions.

(3) The greater the concentration of ammonium chloride in solution the smaller will be the amount of magnesium found in the calcium precipitate.

(4) The greater the volume of solution during hydrolysis of urea and subsequent standing before filtration, the smaller the amount of magnesium in the precipitate.

(5) The presence of a large excess of oxalate is found to be necessary for a complete precipitation of

calcium ions. It also tends to keep the magnesium ions in solution. It was found that the best condition is to add at first sufficient ammonium oxalate to combine with the calcium ions and magnesium ions during hydrolysis and then to add an excess during the period of standing to insure complete precipitation.

A procedure was then proposed for the determination of calcium in the presence of magnesium.

Calcium was determined in the Bureau of Standards Dolomite Sample No. 88 after removal of silica, iron, aluminum, etc. in the usual way. Using the proposed method, the amounts of calcium oxide found were 30.43 per cent and 30.40 per cent, the certificate value being 30.49 per cent. The precipitate was found to contain between 0.1 and 0.2 per cent of magnesium and undoubtedly the same proportion of calcium remained in solution.

The presence of appreciable amount of magnesium in the calcium precipitate can be ascertained by weighing the carbonate at two different temperatures.

By the combined use of urea and a formic acid-formate buffer, a separation of calcium from iron, chromium, aluminum, magnesium and phosphate was shown to be possible. Urea increases the pH of the solution gradually while the formic acid-formate buffer gives the desired pH. Iron was prevented from precipitating by using citric acid or sulfo-salicylic acid. In the presence of aluminum, the amount of ammonium oxalate which must be added at the beginning is a function of the amount of aluminum present. A very large excess of ammonium oxalate is necessary in order to get complete precipitation of calcium as oxalate in the presence of aluminum. In the presence of a large quantity of phosphate, calcium can be determined as the oxalate.

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## HEXAARYLETHANES CONTAINING THE FURAN NUCLEUS

David Richard Smith, Thesis (Ph.D.)  
University of Missouri, 1945

About 1900 Gomberg succeeded in synthesizing tetraphenylmethane for the first time. This compound yielded a tetranitro derivative which, unlike the nitro derivative of triphenylmethane, gave no color when treated with an alcoholic solution of potassium hydroxide. In order to determine whether this test was reliable for detecting the presence of a hydrogen atom on the methane carbon, Gomberg decided to prepare hexaphenylethane and study the behavior of its hexanitro derivative with alcoholic potassium hydroxide. It seemed that hexaphenylethane could be prepared by the interaction of triphenylchloromethane with a metal. This was tried but the compound that Gomberg isolated was the peroxide instead of the expected ethane. It was soon established that hexaphenylethane had dissociated in solution to give the radical triphenylmethyl and that it had reacted with the oxygen present to form the peroxide.

A large number of hexaarylethanes has been prepared which contain a variety of aryl groups and it has been found that most of them possess the property of dissociating into colored free radicals. Numerous explanations have been advanced to account for this dissociation of the hexaarylethanes, but no theory has as yet been entirely satisfactory.

Thus far in the preparation of the hexaarylethanes there has been no reference to work done with compounds of the heterocyclic series. In 1913, Gomberg and Jickling attempted to prepare diphenylthienyl methyl. When diphenylthienylchloromethane was treated with molecular silver, a deep red color developed and the hydrocarbon thus formed was unsat-

urated in character, as shown by oxygen absorption. However, no ethane or peroxide were isolated in a condition pure enough for analysis. In 1921, Gomberg and Minnis tried to prepare the free radical phenyl-thio-xanthyl in order to compare it with phenyl-xanthyl. The phenyl-thio-xanthyl was prepared in solution only and found to be very unstable, the rate of decomposition varying with the nature of the solvent. Later, Minnis prepared diphenylthienylmethyl and found that it possessed the same instability as phenyl-thio-xanthyl.

Since phenyl-xanthyl was much more stable than phenyl-thio-xanthyl, it was thought that perhaps free radicals containing the furan nucleus would be more stable than diphenylthienylmethyl. The furan nucleus was especially interesting from the standpoint of the number of resonance forms (six), although the resonance energy of furan is slightly less than that of benzene.

The most important factor in promoting dissociation of hexaarylethanes is the nature of the aryl group. These individual groups may be arranged in the following order of influence on dissociation:

$\alpha$ -naphthyl  $\rangle$   $\beta$ -naphthyl  $\rangle$  p-biphenyl  $\rangle$  m-biphenyl  $\rangle$  phenyl  $\rangle$  tolyl  $\rangle$  biphenylene/2.

Thus the purpose of our investigation was to: (1) undertake the preparation of certain tertiary alcohols containing the furan nucleus; (2) synthesize the corresponding hexaarylethanes from these tertiary alcohols; (3) determine the molecular weight of these hexaarylethanes; and (4) if possible, determine the position of furan in the above series.

The following results were obtained:

1. The synthesis of di-p-biphenylyl-2-furylcarbinol, phenyl-p-biphenylyl-2-furylcarbinol, and phenyl- $\alpha$ -naphthyl-2-furylcarbinol was accomplished, and their properties investigated.

2. The chlorides of diphenyl-2-furylcarbinol, diphenyl-2-(3,4,5-triphenylfuryl)-carbinol, di-p-biphenylyl-2-furylcarbinol and phenyl-p-biphenylyl-2-furylcarbinol were prepared in solution, and proof

of their existence was obtained by synthesizing several derivatives from them.

3. The synthesis of sym-tetraphenyl-di-2-furyl-ethane and sym-tetra-p-biphenylyl-di-2-furylethane was accomplished and the ethanes obtained in the crystalline state.

4. The molecular weights of these hexaarylethanes were determined in benzene. The ethanes were stable compounds and it was found that the furan nucleus was less effective in promoting dissociation than any other aryl group thus far investigated.

5. The preparation of sym-diphenyl-di-p-biphenylyl-di-2-furylethane was accomplished, but as yet, the ethane is in an impure state.

6. When an ether solution of diphenyl-2-(3,4,5-triphenyl-furyl)-carbinol was treated with thionyl chloride, the methane was obtained instead of the expected chloride.

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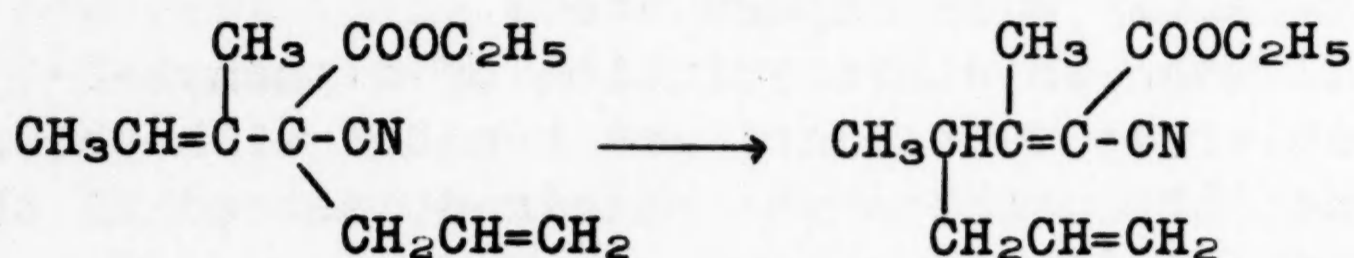
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THE SYNTHESIS AND ATTEMPTED REARRANGEMENT OF  
COMPOUNDS CONTAINING AN ALLYL GROUP  
ATTACHED TO A THREE CARBON SYSTEM

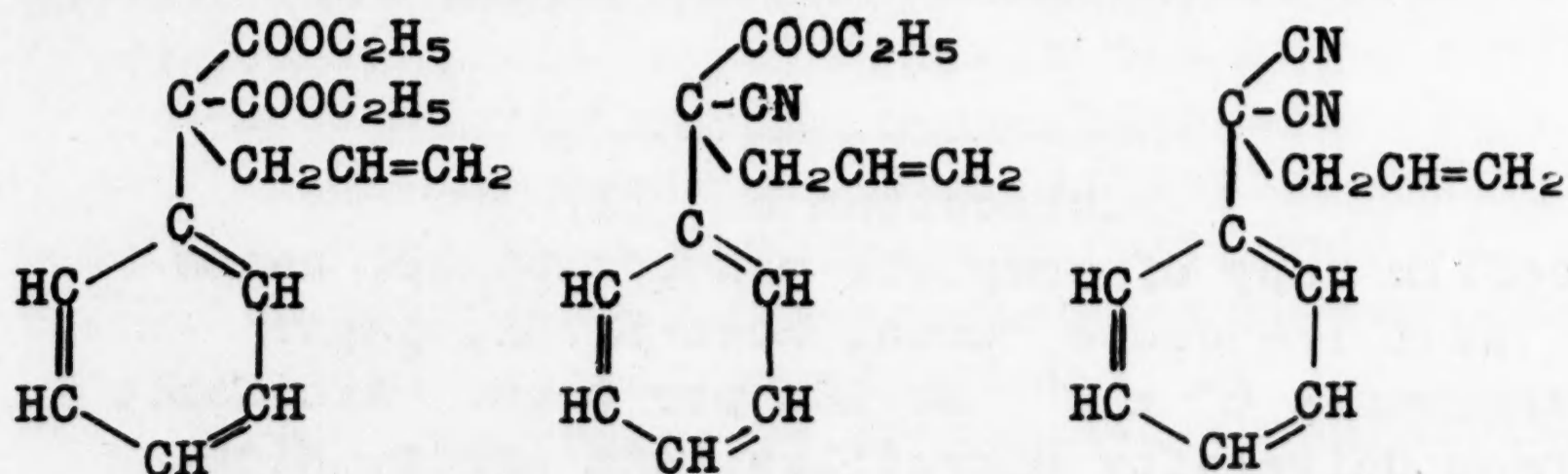
Mary Elizabeth Wright, Thesis (Ph.D.)  
Bryn Mawr College, 1943

In 1940 Cope and Hardy<sup>1</sup> reported the alpha-gamma shift of an allyl group in a three carbon system in which the alpha-carbon atom was attached to two strongly electron attracting groups such as -CN and -COOC<sub>2</sub>H<sub>5</sub>.



This rearrangement is analogous to the Claisen rearrangement of phenyl allyl ethers to ortho-allyl phenols.<sup>2</sup> Further investigations<sup>3,4</sup> of the three carbon rearrangement showed that it was an intramolecular, first order reaction and that the allyl group was inverted during the shift.

It was of interest to determine whether the three carbon system involved in this rearrangement could be part of a benzene ring. The first section of this thesis describes the synthesis and attempted rearrangement of phenol- and substituted phenylallylmalonic esters, cyanoacetic esters and malononitriles.



<sup>1</sup>Cope and Hardy, J. Am. Chem. Soc. 62, 441 (1940).

<sup>2</sup>Claisen, Ber. 45, 3157 (1912).

<sup>3</sup>Cope, Hoyle, and Heyl, J. Am. Chem. Soc. 63, 1843 (1941).

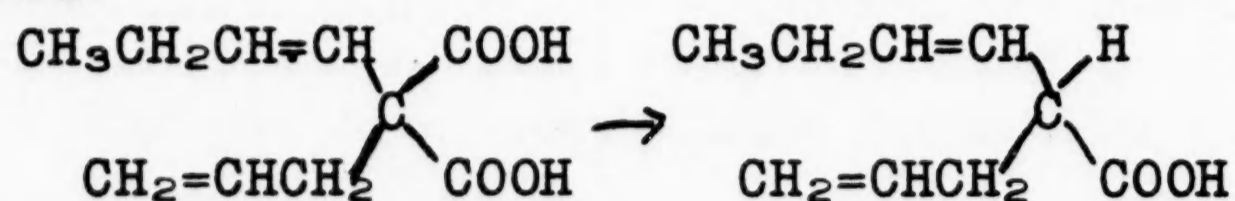
<sup>4</sup>Cope, Hofmann and Hardy, J. Am. Chem. Soc. 63, 1852 (1941).

The product of the hypothetical three carbon rearrangement of these compounds would be corresponding ortho-allylphenyl ester or nitrile.

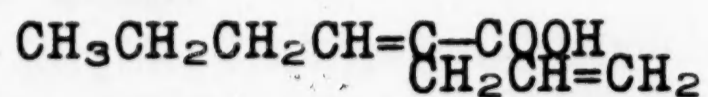
These compounds were heated at high temperatures in an inert atmosphere with and without the presence of catalysts. No rearrangement was obtained in any case. The refractive indices of the compounds did not change when they were heated and oxidation of compounds after heating always yielded benzoic acid, and no ortho-phthalic acid.

A compound was also synthesized in which the benzene nucleus was substituted by groups which would activate the position ortho to the  $-\text{C}(\text{C}_3\text{H}_5)(\text{COOR})_2$  substituent. This compound, methyl (3,4-dimethoxyphenyl)-allylmalonate did not undergo rearrangement when it was heated at high temperatures. Allyltriphenylmethane likewise showed no evidence of rearrangement when it was subjected to similar treatment.

The second section of this thesis describes work undertaken to determine whether a single carboxyl group attached to the alpha-carbon atom would be sufficient to activate the three carbon system for migration of the allyl group. The synthesis of 2-allyl-3-hexenoic acid was carried out according to a series of reactions in which the last step involved the decarboxylation of (1-butenyl)-allylmalononic acid.



Partial isomerization occurred during the decarboxylation, resulting in the formation of some 2-allyl-2-hexenoic acid.



The presence of this alpha,beta-unsaturated acid in the product was indicated by an exaltation in its molecular refractivity.

In order to show that this exaltation was due to the presence of 2-allyl-2-hexenoic acid and not to 4-allyl-2-hexenoic acid resulting from a shift of the

allyl group, the decarboxylation product was hydrogenated to 2-propylhexanoic acid in good yield. This saturated acid was identified by conversion to the amide and comparison with an authentic sample. This isomerization during decarboxylation prevented preparation of pure 2-allyl-3-hexenoic acid and its attempted rearrangement.

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## ECONOMICS

### BROADCAST SONGS - A PARADOX IN MONOPOLY CONTROL

Betty Bock, Thesis (Ph.D.)  
Bryn Mawr College, 1942

"Competition" is a word that connotes both a way of life and a set of analytic assumptions and conclusions. The widespread belief in the first follows from faith in the second. This faith is based on the assumption that if enterprises are small and numerous and their number can easily be increased, competition between them will force allocation of resources to conform with the wants and needs of the population. Belief in these results of competition underlies the modern administration and interpretation of the anti-trust laws.

If these assumptions match all possible conditions of production and distribution, enforcement of competition will always yield the desired results. If, on the other hand, the assumptions are correct only under a limited set of conditions, then competition will yield maximum output at lowest price only under the same conditions.

The main section of this thesis contains a detailed examination of the broadcast song industry to determine whether the assumptions hold true for that case. It studies in turn:

1. The technological background
2. The legal background
3. The copyright pools - ASCAP and BMI
4. Legal and economic issues - 1941
5. The cost of reaching final listeners

This particular industry was chosen for investigation because its present shape and method of operation are directly determined by the copyright law and the mechanics of sound amplification. It, therefore, exhibits certain traits that differenti-

ate it sharply from the type of industry posited by classical economics.

Under the copyright law the composer or his assignee is granted the exclusive privilege of exploiting a song for twenty-eight or fifty-six years. The monopoly right is not, of course, unlimited. Like the patent right, it has been progressively redefined by the courts until today the individual copyright holder can use his property as he sees fit, provided he does not combine with other copyright holders to take specific types of action that have been held to restrain trade.

Under present techniques of broadcasting, the owner of a song right, or the organization that represents him, can reach a continuously expanding audience. Increasing range of transmission and rising ownership of receiving apparatus have together made it possible for more and more people to hear performances.

Law and technology have so combined that the industry operates under decreasing average cost conditions. This is so because in broadcasting a single performance may be heard simultaneously by many listeners. An increase of fifteen minutes, for example, in station broadcast time could result in a far larger increase in listener-minutes. No matter how many persons hear a broadcast, others may always be added without displacing those who were listening at first. This means that for any one broadcast, not only do average costs per additional hearer fall, but the additional cost of reaching an additional hearer is constant.

Appendix A considers the public purpose underlying the anti-trust laws and examines the appropriateness of atomizing a monopoly to accomplish these ends. Thus, fragmentation of a monopoly will result in lower production costs and lower prices to consumers if the monopoly has been operating under increasing cost conditions. If, on the other hand, a monopoly has been operating under decreasing cost

conditions, fragmentation will result in higher costs and may raise prices for consumers.

From a social point of view, it seems clear that atomization is appropriate where a firm or an industry has been able to operate in an increasing cost area only because it was suppressing competition and exploiting the public. Where, however, a firm or an industry is operating under decreasing cost conditions, government regulation should be designed to retain the operating efficiency of the large economic unit while preventing abuse of consumer needs.

This suggests that total government anti-trust policy should be two-sided: it should provide both for atomization and for alternative controls depending in each case on the cost conditions under which a monopoly is operating.

Appendix B applies these conclusions to the song performance industry to show that optimum consumption conditions could be approached more closely through price regulation than through atomization of the industry.

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## MEASUREMENT OF CHANGES IN THE STANDARD OF LIVING DURING A DEPRESSION

Leslie Alice Koempel, Thesis (Ph.D.)  
Bryn Mawr College, 1937

The purpose of the study is to measure changes in income and expenditures of industrial workers' families in a small Pennsylvania town from 1929 to 1933.

Three sources of information were explored: 1) statistical material concerning vital statistics, employment, wages, relief, bank deposits, retail sales, etc.; 2) interviews with business and professional men; and 3) detailed schedules based on interviews with 112 representative families, concerning income and expenditures in 1929 and 1933. Emphasis was placed on an analysis of the well-being of the selected families using material from the other sources as background and supplement.

The technique created for analysing changes in economic status of families is named the 'moving level grouping'. It classifies each family according to its size, the age and sex of its members, and the adequacy of its income in 1929 and 1933 as measured by a minimum standard budget, patterned for each family separately. Each family is placed in one of three categories each measured year: 1) Poor- \$250 deficit or more in its income from its standard budget; 2) Marginal- from \$250 below to \$750 above its standard budget; and 3) Moderate- \$750 or more surplus above its standard budget. Families are then traced as they moved from one level of economic status to another between 1929 and 1933, i.e. Moderate to Marginal, or Marginal to Poor. Although the moving level grouping was based on family income, rather than on expenditures, a close correlation was found to exist between the economic status of families as

evaluated by income and the degree of deprivation apparent in family purchases each year.

The number of workers in Steeltex increased during the depression despite a loss in the total population. Among the selected families, the average number of wage earners per family moved from 1.6 to 2.2 between 1929 and 1933, yet the burden of dependents per employed worker moved from 3.75 persons to 4.10 persons during the same period. The average family income in 1929 among the families studied was \$2553, of which \$2360 came from wages. By 1933, the total income per family had dropped to \$1238, with \$1045 coming from wages.

Not all families suffered equally from the depression. Seventy-seven per cent of the families in 1929 had incomes above their minimum budgets, and possessed 88 per cent of the total income available to the 112 selected families. By 1933, 30 per cent of the families had a surplus above their standard budgets and possessed 56 per cent of the total income. Employment is the most significant index to the family's well-being. Fifty three of the 86 families with incomes classified as Marginal or Moderate in 1929 had fallen to a sub-Marginal plane of living in 1933. Thirty five of the 37 wage earners who lost their old jobs and failed to find new ones were among these families. Half of the 121 under-employed wage earners were also found in these so-called Poor families. On the other hand, only nine of the 61 workers reporting full-time employment were in Poor families. By March, 1933, 40 of the selected families had sought private or public relief, and one in every three Steeltex families was on relief.

Analysis of expenditures of the selected families showed that inflexible expenditures, including housing costs, fuel, and house furnishing goods, consumed 11 per cent more of the average Steeltex family budget in 1933 than in 1929. Expenditures which were more flexible were proportionately reduced. Food expenditures moved from 42.7 per cent of the budget to

38.1 per cent; clothing from 12.3 per cent to 6.9 per cent; and miscellaneous expenditures from 25.7 to 24.7 per cent. Reductions in the percentage spent for food, clothing and medical care were made in spite of an increase in the number of people in the households from 642 to 744.

The moving level technique seems to be a helpful way of analyzing changes in goods and services available to workers' families from one period of time to another. With further refining and testing, it promises to indicate significant variations from year to year in the income and expenditures of families whatever their economic status or geographical location.

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MANAGEMENT PROBLEMS AND PROCEDURES OF A  
MANUFACTURING ENTERPRISE, 1802-1852; A CASE STUDY OF  
ORIGIN OF THE SCOVILL MANUFACTURING COMPANY

Theodore F. Marburg, Thesis (Ph.D.)

Clark University, 1942

This is a case study in business problems, procedure and policy, 1802 to 1852, based upon the operation of several partnerships which were succeeded by the Scovill Manufacturing Company of Waterbury, Connecticut. Data are drawn primarily from correspondence, accounts, and other business records. The development is pictured in broad sweep, 1802-1852, with greatest detail for the years 1827-1840. These fourteen years cover a period of very rapid progress which was made possible by bringing English workmen, processes and machinery to this country.

The Scovill concern traces its origin to the enterprise of Abel Porter and Company, started in 1802, and succeeded in 1811 by Leavenworth, Hayden and Scovill. In 1827 the second firm was succeeded by J.M.L. and W.H. Scovill which was combined, with two subsidiary partnerships, to form the Scovill Manufacturing Company in 1850.

The senior partner, in the period 1827-1840, was James Mitchell Lamson Scovill, whose chief activity was in selling goods and purchasing raw materials in the seaboard markets. A younger brother, William Henry Scovill, joined the firm in 1827 and assumed general direction over production, supervised book-keeping, and called upon the Connecticut banks in quest of discounts.

Problems and procedures in the manufacturing operations are covered in the first two chapters. The products included gilt buttons, rolled brass and divers articles manufactured from rolled brass. The first technical production problems included casting and rolling brass for use in button making, and

manufacturing, finishing and gilding the actual buttons. Later, sheet metal was rolled for sale and larger, more perfect rolls, as well as additional water power became necessary.

The first buttons were made of local scrap brass, by native workers, and with the crude equipment available in this country. In the 1820's and 1830's English workmen were brought to the concern, and improved processes and tools were introduced as a consequence. By the 1840's and 1850's there was a decrease in dependence upon England, even in the production of quality goods. Workmen were trained in the local industry, and manufacturers of equipment became established in the vicinity.

In the 1830's and 1840's, production was divided into three branches, namely: rolled and plated metal, general manufacture and button making. The first line remained in the hands of J. M. L. and W. H. Scovill, while the second was conducted by the partnership Scovills and Buckingham created in 1833; button making was set off under the partnership Scovills and Company in 1840.

During the 1820's and early 1830's a variety of such manufactured items as tops for pepper shakers and tops for inkwells were produced without marked success. In 1834, however, a patent and machinery were purchased for the manufacture of hinges from rolled brass; these hinges were then successfully sold in competition with imports from England. In 1839 Scovill silver plate was used for "plates" in the new daguerreotype cameras which were brought to this country from France. "Plates" of such quality were produced, by the middle of 1840's, that they could be sold in competition with the French product.

Improvement in quality as a result of importation of processes from foreign countries was a first general feature of production management. Dependence upon personal skill of the workmen was a second general feature. Skilled casters were of paramount importance.

The third chapter covers problems of personnel management. A primary task was to bring skilled workers to this country, retain them in spite of positions offered by other manufacturers, and induce them to train apprentices. Unskilled labor was drawn chiefly from the surrounding region, and agriculture continued as a subsidiary activity as late as the 1830's. Wage payments were made in credits to the workman's account at the company store. By 1852, the ties to agriculture had been much reduced, cash wages were introduced, and the Waterbury laborers were well on the road to becoming factory operatives in an urban community.

The partners, as active managers, undertook detailed direction of the business and performed personally a great variety of tasks. Some advance in the formalization and delegation of such tasks did occur, however, between 1830 and 1850. English workmen were sought who could assume responsibility in production or who could "take charge of the rolling mill." In 1835 a full time bookkeeper was hired.

Selling methods, outlined in the fourth chapter, show three stages. Early sales were through peddlers, to the United States Commissary, and at auction. During the 1820's and 1830's sales were made through commission merchants who were stocked with Scovill buttons. These merchants arranged for advertising, procured raw materials, forwarded freight, and served in other ways as agents for the Scovill enterprise. Finally, there was an increase in direct selling which developed more fully after 1846 when a Scovill depot was opened in New York. By the 1850's Scovill salesmen made direct sales as far west as St Louis and as far south as New Orleans.

Chapter V, on finance, covers the source of funds invested, financing of current assets (by purchase of raw materials on time and by borrowing at banks), profits, and their distribution and reinvestment. The source of funds with which successive proprietors bought their interests was chiefly

storekeeping or varied commerce; some came from small scale industry, agriculture, or landholding. Raw materials were paid for with a long term note or by acceptance of a long term draft. Bank credit was obtained by discount of long term drafts on agents or customers, or by discount of notes endorsed by these parties. The panic of 1837 brought severe distress to a business conducted largely on credit.

Despite adversity the Scovills prospered, and by 1850 the capital had grown from less than \$2,000 (in 1802) to \$200,000. The decade of the 1850's marks the close of a first phase in Scovill development. The firm was incorporated in 1850, and a few years later the two Scovills passed away. The business problems which were faced in the 1850's were rather different from those which the Scovills had faced. A local bank was established in 1848 and in the following year railroad connections to Waterbury were completed. Domestic copper supplies were developed after 1851, and in 1852 Scovill policy marked the era of industrial specialization by giving up the general merchandise store and by installing a steam engine at the factory.

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## EDUCATION

### A STUDY OF THE NEEDS OF FRESHMEN HOME ECONOMICS STUDENTS AND STUDENT PERSONNEL SERVICES IN THE SCHOOL OF EDUCATION OF NEW YORK UNIVERSITY

Zelpha Mae Bates, Thesis (Ed.D.)  
New York University, 1946

#### The Problem and Its Significance

This is a study of the relationship between the needs of freshmen students entering the Home Economics Department of New York University and the student personnel services offered them.

Since colleges are accepting increasing responsibility for the development of the "whole individual," it is important that they have a clear picture of the personnel services extended to freshmen, for the quality of the adjustments made by freshmen determines to a great extent their success during four years in college.

#### Delimitations

This study is concerned specifically with the group of twenty-nine freshman students entering the Home Economics Department of New York University in September 1945, and the student personnel services offered them during the first semester of 1945-46.

#### Methods of Procedure

1. To secure objective data concerning the problems of freshmen, the following research instruments were used: the Pressey Study Questionnaire, American Council on Education Psychological Examination, the Cooperative English Test, and the Bell Adjustment Inventory. Scores below the thirtieth percentile were taken to indicate problems needing special attention, both in comparing the sample group with the norm groups and in comparing students within the group.

2. Data concerning student personnel services

were collected through interviews with the administrators in charge of the various services concerned.

3. Data accumulated through the above procedures were used to indicate the needs of freshmen which are being met through existing student personnel services.

### Findings

1. The average scores for the sample group compare favorably with the average scores for the norm groups, except in the study habits. It was found that three-fourths of the sample group spend one and one-half hours each day in travel, and this may be a factor in time management that relates to study habits.

2. When the sample group was compared with the norm group, it was found that the numbers of students in the sample group having educational problems are significant. For example, two-fifths of sample group have ineffective study habits; two-fifths show limited ability in the use of quantitative symbols, and one-fifth show serious problems in the use of verbal symbols; one-third had total scores on the psychological examination indicating limited scholastic ability.

3. When distributions of the sample group were studied, it was found that the proportion of students falling below the thirtieth percentile was even greater than when comparing them as a group with the norm group.

4. In the area of personal adjustment, comparisons of the sample group with the norm group, and comparisons of individuals in the sample group with one another, show few differences. It was found, however, that the numbers of students in the sample group having problems are significant. More than half of the sample group have problems in one or more areas. For example, one-fourth of sample group show less than "average" adjustment to their home situation; one-third have health problems; one-third

show problems of social and emotional adjustment.

5. The survey of student personnel services in the School of Education reveals limited development in these services for several years prior to 1945-46. It was shown that these services are not meeting the needs of entering freshmen in the light of the standards described through documentation of authorities in the field.

### Recommendations

Following are the main recommendations made in the interest of a coordinated program of student personnel service:

1. The appointment of a coordinator of personnel services.

2. An admissions program, having a broad base, to include standard tests and other instruments that would provide information concerning students as the basis for continuous counseling.

3. A freshman orientation program that would continue throughout the freshman year.

4. A total personnel program coordinated with departmental guidance programs. The selection of staff members for special responsibility for counseling, with adjustment of teaching load.

5. The development of well-organized, democratically administered student activities.

6. Special attention to provide adequate housing and food as an all-University program.

7. More emphasis on mental health, with counseling supplemented by the services of a mental hygienist.

It is suggested that the work of the coordinator of student personnel services be guided by an advisory group composed of faculty members, sometimes called a Personnel Council. The true significance of student personnel services is represented by the extent to which they contribute to the acknowledged educational objectives of the institution.

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A STUDY OF THE COMMUNITY OF WALLINGFORD, CONNECTICUT  
WITH RESPECT TO SECONDARY SCHOOL  
CURRICULUM AND PLANT NEEDS

Charles E. Elkema, Thesis (Ed.D.)  
New York University, 1945

Statement of the Problem

The problem was to study the educational and social needs of the community and the efficiency of the secondary school program so that when the proposed new high school plant was built it would accommodate the newly recommended education program.

Background of the Problem

Public education has come to be one of society's chief agencies in seeking a more orderly solution of social and economic problems. That these problems are acute is attested by the news reported in many papers, by the comments and articles appearing in the numerous periodicals devoted to civic and social improvement, and by the large number of recent books on social and economic questions. During the past five years, it has come forcibly to the attention of the American people, and especially to its educators, that these problems have been accumulating rapidly with the growth of industrial changes, and that a point has been reached in secondary education where solutions be formulated, if we are to avoid a further drift in a chaotic direction.

The secondary school as an agency of society must not fall behind the civilization of which it is a part but must become a dynamic force in its community. It then becomes essential to discover what basic forces have brought about these changes and what the school can do to meet them. This creates a problem of threefold nature, (1) to discover the elements basic to the efficiency of the school in its relation to pupil and community needs, (2) to

apply this knowledge to the making of an improved educational program, and (3) to determine building standards for housing such a program properly.

#### Procedure

The methods and procedures are those employed in social and educational research in a given social area or community. The two chief procedures followed were (1) collecting and analyzing historical information and statistics, and (2) use of special survey instruments to determine job opportunity, and the amount of occupational adjustments that high school graduates met on entering the business world.

The historical research covered the early socio-political institutions, including the colonial educational program, and these were later contrasted with parallel institutions of the early 1940's. The sources used were early colonial historical documents, minutes of the town meetings, and statistical data from local, state, and national sources.

In the further development of the study the procedures called for the appointment of committees of laymen, teachers, supervisors, and administrators. Upon the completion of the surveys, the committees met and discussed their findings and then made their recommendations to the local board of education for further study.

It has been the general plan of the study to draw a series of occupational pictures by approaching the problem from different angles. There has been an attempt made to develop a picture from the angle of the United States Census. Others also have been sketched from materials provided by three groups of young workers, the high school graduates of the Classes of 1935, 1937, and 1940. Still another has been provided from the angle of the comparison of the occupational choices of the students still in high school with their parents' vocation. And still another was furnished from the angle of the employers. Each of these pictures of the relative occupational distribution in Wallingford, it is hoped, will help in developing an intelligent understanding of the

work opportunities in the community for both young men and women and aid in the formulation of an educational program for the town's public secondary school.

The instruments used in collecting the data for the occupational survey had been used in the Canton, Ohio, Occupational Survey, under the sponsorship of the Canton Public Schools in cooperation with the Ohio State Board of Vocational Education. The questionnaires had been devised by the College of Education, Ohio State University.

Another survey making use of the special instruments was that of the occupational adjustment survey of one-year, three-year, and five-year graduates of the Wallingford high school. The special instruments were the post-inventory forms and the follow-up record cards. These two instruments had been devised and published by the Occupational Adjustment Study, National Association of Secondary Principals.

Through these two survey instruments an attempt was made to discover the degree of success or failure of the local high school graduates, and the number of occupational adjustments that it had been necessary for them to make in their first ventures in the business world. In this study, of 501 post-school inventory forms sent out, 367, or 73.2 per cent, were filled and returned for study and evaluation.

### Results

One of the oldest settlements in the state of Connecticut, Wallingford had a slow but fairly steady growth from the time of its establishment in 1670 until the latter part of the nineteenth century. During this time it had remained a fairly homogeneous community of like-minded people of native-stock parentage. However, during the past fifty years the town had experienced a quite rapid growth accompanied by many changes in its social and economic structure, changing what had been a like-minded community to one which was influenced by the various cultures and ideologies transplanted from dozens of European

countries by representatives of the various ethnic groups from over the sea settling in the town.

The background of the early colonial common schools in Wallingford was English, but the development of the free public high school had been in the main respects peculiarly American. In the colonial period and early post-Revolutionary times the local schools had followed the general pattern of the dual educational system then in vogue in England. In Wallingford there were two educational systems; the private academies, which reached their heyday in the late nineteenth century and which served the children of the wealthy, and the common school which served the children of the "common people." But even the early town schools in Connecticut were part of the general pattern of class education. The Wallingford Academies, or Latin Grammar Schools, were privately supported, fee schools, as were the academies which rose near the end of the colonial period. As in England the function of the secondary school was to provide preparatory college training for the sons of the wealthier families who were planning to enter positions of leadership in the church, the law, or in business life. The public high school established in Wallingford in 1870 largely adapted its scholastic program to that of the private academy. With the child labor acts not passed for many years, and the legal school leaving age remaining at 14, secondary educational training for the masses did not apply until the legal leaving age was raised to the age of 16. The local high school curriculums of 1907 and 1940 were very similar with the emphasis still placed upon the college preparatory program.

The trends toward industrialism and the resultant flow of rural labor from the local farm areas, together with the stream of foreign-born workers flooding the local labor channels created an ever-growing urban population. As late as 1850, 84 per cent of the local population was rural as compared

with 29.6 per cent in 1930. The ratio of youths to adults in the community had changed from 9 to 10, in 1850, to 11 to 32, in 1940. In the meantime, the technical displacement of labor and the aging of the total population were contracting employment possibilities under a wage-labor system.

Family education in colonial days was practiced in an occupational setting. Nowadays the recreational and domestic functions of the family have been diverted, and many forces have conspired against its integrity as a social unit. The dependency of Wallingford youth was prolonged concurrently with the rising trend toward shifting responsibility for them to the public agencies, and especially to the public secondary school.

#### Digest of Findings

The Employer's Survey showed need for vocational training in industry, sales, and clerical work.

When the results of the Occupational Choice of the Students still in high school in comparison with the Parents' Vocation were completed it was obvious that if the youth of the local schools continued in the occupations chosen when they entered the local work-field there would be a severe labor shortage in the Skilled, Semiskilled, and Sales fields in Wallingford.

The Occupational Adjustment Survey of the high school graduate revealed that 87 per cent of the boys out of school three years, were still living within the community where they might be within the possible influence of the high school from which they graduated. The girls had to a somewhat lesser degree remained within the area of influence of their high for at least five years after completing their studies.

The youth electing the college and general courses in high school made a greater number of occupational adjustments after entering the work-field. In comparison the youth who had elected the commercial course, the one terminal course in the school, found little difficulty in becoming adjusted to their occupational choice.

Sex seems to have been a deciding factor in the making of an earlier choice of an occupation, for more girls than boys made an earlier choice of a vocation of the group studied.

In the matter of assistance received in high school in the selecting of a future occupation, 78 per cent of the students declared "no one" had aided them while in school to make such a choice.

There were 63.2 per cent of the boys, and 37.8 per cent of the girls who were not influenced by any school subject in their choice of an occupation.

The amount of occupational adjustment of the control group of 171 former graduates of the Wallingford High School who had not taken any post-high school training, revealed the following: (1) that these graduates have had a very difficult time in finding suitable jobs, (2) that they more or less drifted into the various fields of work that they had entered, assisted largely either by their own family or by friends of the family, and taking positions that showed little or no relation to the type of job desired and later planned for, and (3) that a very large group of the graduates were still undecided as to what occupation they were planning to make their life's work. In short, the occupational adjustments made by these graduates who had received no formal education beyond the high school must be held to be most unsatisfactory.

In Wallingford, the secondary school as an agency of society had failed to keep pace with the civilization about it, and to a very large degree had remained static in regards to its meeting the needs of its students and the community which it served.

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A CAUSAL-COMPARATIVE APPROACH TO THE STUDY OF SECONDARY EDUCATION IN GUATEMALA, COSTA RICA, ECUADOR AND COLOMBIA, 1924 - 1944

Herbert Bickling Gooden, Thesis (Ed.D.)  
New York University, 1946

The purpose of this study in comparative Latin American education is to offer a reasoned and documented analysis of the causal factors incident to the historical development of secondary education in Guatemala, Costa Rica, Ecuador and Colombia, 1924-1944, and their educational significance. The four countries were selected because their educational systems had not been studied from the causal-comparative approach; nor had an extensive study been made of original sources, in Spanish, such as the reports of the ministers of education and the annual messages of the presidents of these republics. Since the method of research is one of comparisons dealing with likenesses and differences in factors which may have had influence in the development of secondary education, it was pertinent to select countries having such phenomena in common as well as significant differences in their economic, social and political development.

The causal-comparative method of research in education shows, if properly used, the probable comparative relationships between systems of education through the analysis of causal factors in their likenesses and differences. Beginning with observed phenomena, antecedents may be discovered through the inductive-deductive approach. The logic of the research method was described by John Stuart Mill in his first and third canons of logic.

In the first canon, called Agreement, if two or more phenomena being investigated have only one circumstance in common, that circumstance may be

regarded as the probable cause (or effect) of the phenomenon. The third canon, called Double Agreement, extends and completes the logic of the first canon. In order to isolate those observed circumstances which are probable causes, it is necessary to find causes which are absent when the phenomena or result does not occur. An observation of factors in as many conditions as vary must be made to guard against unwarranted conclusions. The direction of causation cannot be determined simply from association, and the presence of common elements in most situations limits this method of research to the discovery of the most significant, or probable, factors determined by common practice in comparative educational researches.

A careful study of the primary sources and all significant secondary accounts was made in order to isolate probable causal factors related to the historical development of secondary educational features which were found in the historical study was made in order to give direction to the study of probable causes. The general aspects of secondary education in the four countries was also tabulated in the search for common factors. Since curricular changes within the period of years studied assumed significance to the study, a tabulation of the curricula was made in order to show comparative offerings and significant differences. Various curricular reforms were also analyzed as phenomena which might be related to the causal-comparative development of secondary education in the four countries. A tabular summary of probable causal factors discovered in the primary sources and secondary accounts was made in terms of the specific probable phenomena, country, author reference, thesis reference and date. There were seventy-six such probable causal factors. The most significant were found to be: Standard of living, Positivism, secondary education for a practical life, required patriotic observances, examinations, secondary education for a national

culture, increasing centralization, state control of secondary education, educational management by decree, secondary education for an elite, race and class discrimination, university entrance requirements, and French influence. The generalized concepts of these phenomena were: Economic, philosophy, nationalism, tradition, organization and foreign influence. The least significant phenomena observed appeared to be: Agricultural problems, vocational education, special educational taxes, political unrest, poor leadership, political idealism, growing liberalization of secondary education and constitutional reform.

The primary sources for the study were the following official publications: Mensaje del Presidente de la Republica Guatemala; Revista de Educación, Guatemala; Memoria de la Secretaria de Educacion Publica, Costa Rica; Boletin de Educacion Pública, Costa Rica; Informe, Ecuador; Diario Oficial, Colombia; Memoria, Colombia; and La Obra Educativo del Gobierno, Colombia. Particularly valuable secondary accounts were published by The Pan American Union, the Office of the Coordinator of Inter-American Affairs, the Bureau of Education (1923), and the International Institute of Teachers College, Columbia University, Educational Yearbook, 1932 and 1942.

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## FINGER PAINTING AND PERSONALITY DIAGNOSIS

Peter Joseph Napoli, Thesis (Ed.D.)  
New York University, 1945

The purpose of this investigation is to define, describe, and present Finger-Painting as a projective technique in personality diagnosis.

The need for this research is emphasized in the literature where it is indicated that the results obtained through the use of questionnaires, inventories, and schedules are unsatisfactory. Since these objective devices in many instances do not supply dependable information, an additional method for studying the complete personality should be helpful. Furthermore, the wide interest shown in projective techniques justifies the investigation at this time. Finally, although Finger-Painting is widely used, its possibilities have not been adequately defined, described, or presented.

The history of Finger-Painting is presented from its origin in Italy in 1922 and its chronological development is traced to date. This developmental narrative is enriched with the educational philosophy of Ruth Faison Shaw. The Finger-Painting kit and supplementary material are described from the viewpoint of color, content, consistency, odor, harmlessness, washability, and standardization. The preparation and arrangement of the material used are described; and the actual administration of the technique is completely presented. The Finger-Painting process is described and the significant categories pertinent in the process are explained. These include handedness, color, motion, rhythm, texture, balance, order, symbolism, and verbalization. The individual's performance is described in terms of his physical behavior and reaction during his finger-painting performance. Some aspects of interpreta-

tion are presented with case illustrations of the schizophrenic, paranoid, and unstable personalities. A bibliography and a glossary of technical terms are appended.

Only Shaw Finger Paint is used by patients throughout this study. The I.Q. of subjects is not considered a factor in this study. The essential consideration of this study is the emotional level, state, or condition of the individual at a given time. The cases selected for illustrative purposes and used in gathering data were referred by mental hygiene clinics, psychiatric institutions, and service centers of the Armed Forces. The materials from the personal files, notes and writings of Ruth Shaw and of the investigator constitute primary source material. Case records from the agencies and the literature in this field make up the writer's secondary source material.

#### Procedure

The Finger-Painting technique at first was administered to a group of patients who had been diagnosed by qualified psychiatrists and psychologists in charge. After a representative number of cases were completed and the observations of the characteristics of these known cases were studied, the findings were tabulated according to the categories and subdivisions as described in the document. The findings were confirmed by the case records. Syndromes discovered in the productions of the schizophrenics and paranoids were compared with the productions of normals and with subjects having other types of personality disorders. No similarities of syndrome were found among these groups. These findings were later applied to cases where the diagnosis was not known until after a Finger-Painting diagnosis was made. In all instances the diagnosis was later confirmed by the physician. Approximately nine hundred cases were used in this study.

#### Results

The significant facts which have been discovered

are: a definite syndrome for the schizophrenic personality can be elicited through this medium. Also, a characteristic group of symptoms for the paranoid personality can be elicited through the Finger-Painting technique.

From the evidence presented in the context, it is demonstrated: That Finger-Painting as a projective technique does contribute to the appraisal, study, and further understanding of human personality. That used as a creative instrument, this device does encourage self-expression which, with certain other devices sometimes appears impossible. That by reason of its being both a verbal and performance experience it more closely approaches a valid method of appraising the total personality. That because it is possible to use it with those age groups where speech is not fully developed its general applicability as an instrument of communication is extended over certain other projective techniques. That its lack of rigid and quantitative method enhances the possibility of application when one considers the total complex and interrelated dynamisms which make up the total personality. That in Finger-Painting, diagnosis and therapy can go along concomitantly. This latter feature adds to the usefulness of the Finger-Painting technique as a practical clinical instrument.

#### Suggestions

Concerning the technique itself many investigations naturally will flow out of the work just completed. Such investigations should include a refinement of the techniques; the use of Finger-Painting as a possible group method of personality study; the devising of a form for convenience in recording the various aspects of the process.

A large field of research must be covered before other psychotic patterns and syndromes may be elicited through this device. The application of this technique should prove a fertile field in the investigation of the neurotics and psychoneurotics.

An investigation to unfold relationships between Finger-Painting and levels of intelligence should be revealing. Further, Finger-Painting appears to have promise as an aid to therapy. This should be investigated to determine in what ways this medium can aid the psychotherapist. Such dynamisms as fears, conflicts, repressions, etc. should be investigated by the Finger-Painting medium to determine whether it can uncover their origins and basis.

With all these potentialities, therefore, Finger-Painting adding to, and not substituting for, other methods of personality diagnosis cannot be overlooked in the present search for more helpful clinical methods of personality appraisal.

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# A PROPOSED COURSE OF STUDY FOR PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS OF TEXAS

Nina Lucille Norton, Thesis (Ed.D.)  
New York University, 1946

## The Problem

The problem is to develop a tentative course of study for physical education in the elementary schools of Texas. It includes a study of:

1. The role of physical education in developing physical fitness in the elementary school child.
2. Authoritative materials for essential elements of the curriculum.
3. The graded placement of physical education activities in grades one through six.
4. Presentation of actual teaching materials in such a way as to be most easily used by an instructor.

## Purpose of Study

It is the purpose of this study to provide those activities, methods, and procedures which will aid the classroom teacher to assume responsibility for teaching a modern program of physical education with a greater measure of success in achieving the accepted objectives of physical education.

## Importance of the Study

It is obvious that the responsibility for physical education instruction, in the main, will be upon the classroom teacher, rather than the specialized teacher who has become frequently a supervisor and coordinator of physical education programs in elementary grades.

"The influx of teachers who are totally unprepared or only partially prepared in the field of physical education, caused by the great exodus of teachers into the armed forces and into industry, gives rise to a need for guides and suggestions to supplement in-service training."<sup>1</sup>

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<sup>1</sup>W. K. Streit, Guides to Better Teaching, Journal of Health and Physical Education, XVI (March, 1945), p. 125.

### Procedures

The role of physical education in developing physical fitness of the elementary school child was obtained from the statement of outstanding leaders in the field.

The statements of these authorities justify the following summary for the future program of physical education in the elementary schools:

1. Attainment of the same general objectives--organic power, psycho-motor power, interpretive-cortical capacity, and emotional-impulsive stability.
2. Minimum of thirty minutes daily instruction periods.
3. Adequate space, equipment, and supplies.
4. All-round use of facilities--Saturdays, evenings, holidays, and summer vacation.
5. A well-chosen program of varied activities.
6. Trained instructors.
7. Provision for adequate health service and instruction.

The essential elements of the physical education curriculum for elementary schools are based upon the recommendations in The Physical Education Curriculum, prepared by the Committee on Curriculum Research of the College Physical Education Association, assisted by hundreds of leading physical education supervisors. This committee has formulated and recommended a comprehensive, graded program to assure a common ground of basic skills and knowledge, with sufficient flexibility to any ordinary situation regardless of climatic or other conditions.

A checklist for grade placement of physical education activities in elementary schools was sent to specialized teachers (those who received college degree with a major in physical education) of physical education in elementary schools of Texas. The results of these checklists were tabulated for final grade placement.

The description of these graded activities was submitted to sixteen class-room teachers in three elementary schools of Nacogdoches, Texas, to assure

clarity of description for the teacher not specifically trained in physical education.

Nine state courses of study, selected because of the recency of publication (since 1938) were surveyed and used as a basis for the organization of the complete course of study.

### Summary

In this study the LaPorte<sup>2</sup> curriculum was used as a basis for recommendations for the elementary school physical education programs. This has been implemented by numerous books and periodicals, various state courses of study, and bulletins of the Texas state department of education.

Following these recommendations, a proposed course of study for physical education in the elementary schools of Texas was set up giving the characteristics of a good program.

The elementary program should include a minimum thirty-minute physical education instruction period, exclusive of recess periods. The activities should include: rhythmical activities, hunting games, athletic games of low organization, relays, stunts and self-testing activities, mimetics, story plays, and individual athletic events. A satisfactory program can be conducted without a gymnasium and with a minimum of equipment. The noon-hour program should be supervised and include activities which are not strenuous nor highly competitive. The teacher should be familiar with special methods for teaching physical education activities and strive for the development of the general objectives of physical education. Pupil learning should be motivated through intrinsic rewards. Whenever possible the physical education program should be integrated with other units of work.

<sup>2</sup>William R. LaPorte, The Physical Education Curriculum.

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## EDUCATION IN NIGERIA(1842-1942)

Nnodu Joel Okongwu, Thesis (Ph.D.)

New York University, 1946

### The Problem and Its Significance

The problem was to trace the history of Nigerian education in a threefold treatment, embracing: (1) A review of the political and economic changes resulting from the British occupation of Nigeria during the nineteenth century, as one of the major factors conditioning educational development in Nigeria; (2) a description of the evolution of Nigerian education from 1842 to 1942; and (3) recording of its major defects and suggesting certain measures for its improvement.

The importance of this study was dictated by a desire to provide a basis for an intelligent and constructive solution of certain basic problems now facing Nigerian education, such as mission versus government support of education, formulation of educational ideals and curricula better suited to the needs of the country and its people.

### Procedure

The annual reports of the various government departments in Nigeria, especially the Education Department; and the memoranda of the British Government on colonial education, particularly those issued by the Colonial Office, have been used as the basis for a historical study of the evolution of Nigerian education. This historical study, was followed by a critical analysis of the data presented and suggestions for improving the current educational practices of Nigeria.

### Findings

The foundation of Nigerian education was laid

by British Christian missionaries. The Wesleyan Mission and the Church Missionary Society led the way by the establishment of their respective missions at Badagry and Abeokuta between 1842 and 1846. They were later followed by other missions among which were: the United Presbyterian Church of Scotland, 1847; the South Baptist Convention of America, 1853; the Roman Catholic Mission, 1868; the Primitive Methodist, 1894. These missions now operate elementary, secondary, and normal schools. The mission schools total over 4,000; or more than 80 per cent of all the schools in Nigeria.

Except for the maintenance of 31 elementary schools, 13 secondary schools, 7 teacher training institutions, and one vocational "Higher College;" and granting of an annual subsidy to a few qualified private schools, the educational role of the British Government in Nigeria has been mainly supervisory. The main burden of establishing and financing schools is borne by the missions and the Nigerian people.

### Conclusion and Suggestions

1. Educational development of Nigeria has been retarded because of (a) imposition of British educational ideals and practices, especially the tradition of Cambridge School Certificate external examination, which has made local adaptation impossible; and (b) inefficient and cheap method of providing public education through government subsidy of missionary schools.

2. The British Government in Nigeria has done very little towards the country's educational development, with the result that 2,650,000, out of an estimated 3,000,000 children of school age have no facilities for any kind of formal education.

3. The missions are financially incapable of undertaking any further substantial educational expansion, and therefore cannot provide education adequate to present demands. Were funds available, however, it would be inadvisable to entrust educa-

tion on a national scale to the missions, because of their religious preoccupation and the social effects of their inter-denominational jealousy.

4. For better educational development of Nigeria, the British Government in Nigeria should enact a compulsory school attendance law, and, in cooperation with the local governments, inaugurate a free public school system, at least on the elementary level.

5. Nigerian education should be freed from all external controls, especially foreign examinations, in order to facilitate adaptation of the school curriculum to the actual needs of the country and its people.

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## SOCIAL GUIDANCE NEEDS IN THE SECONDARY NEGRO SCHOOLS, CLEVELAND COUNTY, NORTH CAROLINA

Zelda Carpenter Pemberton, Thesis (Ed.D.)  
New York University, 1946

### The Problem Set Forth

1. The purpose of this study was to determine the social guidance needs of the Negro youth enrolled in the secondary public schools of Cleveland County, North Carolina, surveying the following areas:

- a) Health
- b) Recreation
- c) Social welfare

2. The specific objectives of the study were:

a) To determine the cultural background of the youth

b) To determine the physical condition of the school, and ascertain whether the courses offered were those desired by the youth

c) To determine youth opinions of their school and community and the recommendations for improving them

d) To ascertain whether Cleveland County was meeting the needs of its Negro youth in the areas of health, recreation, and social welfare

e) To draw such conclusions and make such recommendations as the findings of the study might justify

3. The basic assumptions of the study were the following:

a) That the recommendations made, in Paths to Maturity (Gordon W. Lovejoy), in The Purpose of Education in American Democracy (National Educational Policies), in Social Services and the Schools (National Educational Policies) on health, recreation and welfare services were valid

b) That these recommendations should be met by

the educational and community organizations of the county

### Procedures Used in the Study

1. The sample of youth upon which this study is based consists of the following:

a) Youth who were enrolled in the seven Negro secondary schools during the school year of 1944-45

2. Information was secured as follows:

a) From all in-school (secondary) youth by questionnaires that were administered in a semiofficial manner by the school principals through the homerooms

b) From interviews with principals, ministers, teachers, and pupils

c) Statistical information from following sources: United States Census Bureau 1937 reports; State Board of Education; State Public Welfare; State Health Department; and various reports available in the county

3. Data from all these sources were tabulated according to their nature. After tabulation, these data were presented as follows:

a) In tables as percentages

b) These tables were introduced with comments and such inferences and implications as were necessary for analysis

### Findings of the Study

The findings of the study as related to the specific objectives of the study are summarized as follows:

1. The cultural background of youth

a) Pupils backgrounds 100 per cent Native American

b) Three-fourths of the pupils are rural

c) Over 50 per cent of their parents have been born in North Carolina

d) About three out of ten youths come from families who own their own homes

e) About 27 per cent of the Negro population

have no modern conveniences in the home

f) A little over one-half of the mothers are the chief bread winners, who receive on the average about \$3.00 per week

g) Apparently a good relationship between parents and children

h) Almost one-half of the homes are broken

2. The physical condition of the schools and the desirability of courses offered from pupils standpoint

a) Only one (urban) of the seven secondary schools has modern toilet facilities

b) Only three schools with an approved water supply

c) One school with a central heating system, and one building with a gymnasium

d) Only two schools have a separate room designated as a library

e) No full time librarian in any school (A teacher has charge of the library certain hours of the day)

f) No Negro Newspaper in any Library

g) No public library for Negroes

h) Over 50 per cent of the secondary population are retarded

i) Apparent lack of adapting the instruction to the individual needs of the pupils

j) There is little consistency between the courses offered and those which the pupils desire

3. Youth's opinions of their school

a) It is poorly equipped

b) It is not preparing youth to meet the demands of life

c) There is a lack of relationship between home and school

4. The problem of whether Cleveland County is meeting the needs of its Negro youth in the areas of health, recreation, and welfare services

### I Health

a) School play grounds are small, inadequate,

and have little equipment

b) No physical education teacher at any school

c) About 74 per cent of the pupils have never been inoculated for typhoid fever

d) Most of the physical examinations, vaccinations, and inoculations were given over two years ago

e) About four-fifths of rural youth have not had a tuberculosis test in the past two years, yet over 67 per cent showed positive tests

f) There is no Negro doctor or nurse in the county

g) No provision for psychiatric diagnosis and treatment for Negro youth

## II Recreation

a) No organized public recreation program in the county

b) Basketball and baseball are practically all the sports attempted

c) There are no swimming pools, no parks, public or private for Negroes, no public picnic grounds, no commercial recreational places except one pool room, and it is not supervised

d) Four theatres with only 200 seats available for Negroes

e) The churches have young peoples' organizations but provide little or no recreational programs

## III Social Welfare

a) The social welfare board is in cramped quarters in the court house

b) Present case load per worker is close to 300 (no Negro case worker)

c) No Negro workers on the board of welfare

d) The county does not participate in the State Boarding Fund or in the Child Welfare Service Unit

e) There is no mental hygiene program

f) No adequate detention quarters for juvenile delinquents

g) The welfare department does not have control over cases requiring medical and hospital care at the county's expense

h) There is one hospital in the county which provides 25 beds for Negroes, one private room, (1.7 bed per 1000 pop.) and four Negro bassinets

i) Approximate cost in hospital per patient, \$4.27 per day

j) No facilities for mentally or physically handicapped children

k) The county's average grant to dependent children is about one-half that of the nation's average

l) There is no orphanage in the county (two in the state for Negroes)

m) No county tuberculosis sanitorium (one in the state)

n) Feeble minded youth are sent to the State Hospital for Negro Insane which originally was intended for adults

o) There is no contraceptive center, and no birth control instruction is given even though North Carolina is one of the three states with birth control officially incorporated in the public health program

p) There is one county home which accomodates a "few" Negroes

q) It appears that the Negroes feel that "Jim Crowism" is being practiced

#### Conclusions Drawn from the Findings

The conclusions drawn from the findings of this study were as follows:

a) That the standard of living for the secondary Negro youth of Cleveland County is inadequate

b) That the physical condition of the schools is in dire need of improvement

c) It seems that the youth are not receiving from the schools the type of education that they may

reasonably expect

d) That the school health program appears to be insufficient and what while the county health department has done much there yet remains much to be done

e) That the school and community recreational facilities are inadequate

f) That the social welfare services are very meager to the Negroes

g) That the Negro youth do not have as high a regard for their school and church as might be expected, and that they offer some very definite suggestions for their improvement

#### RECOMMENDATIONS FOR IMPROVING THE SOCIAL GUIDANCE NEEDS

The following recommendations for improvement of the social guidance needs were made and each was justified by reference to the findings and by appropriate discussion:

1. To increase the standard of living it is recommended that:

a) The Board of Public Welfare launch a thorough study of the housing situation, urban and rural

b) The improvement of the relationship of white employers and the colored employees

c) Offering employment opportunities above the menial level

2. To improve the physical condition of the school it is recommended that:

a) Adequate space be provided for the pursuance of classroom work, health, and recreation programs

b) Modern toilet facilities and central heating systems be installed

c) Provisions for approved drinking water

d) Adequate reading rooms for the libraries

e) Certified librarians should be employed for all schools

3. It is recommended, in organizing the school

program that:

a) More diversified vocational courses be offered

b) Instruction in sex problems and in marital relations be included

c) Local schools institute special classes, classrooms, and teachers for the instruction of mentally subnormal pupils

4. To improve the health conditions it is recommended that:

a) The schools conduct physical examinations annually

b) The program for health and recreation as described and prescribed by the North Carolina State Board of Education be followed

c) A full time physical education teacher be employed in each school

d) Playgrounds be repaired and more adequate playground equipment be provided

e) There should be one Negro nurse and a psychiatrist

5. To improve recreational facilities it is recommended that:

a) Legally constituted recreation commission should be created

b) Community centers should be built throughout the county

c) Committees of youth organize with the slogan 'Better recreation makes better Americans'

d) Commercial recreation for youth be supervised

e) Provisions be made for more sports

f) Encouragement be given to some civic organization to sponsor picnic grounds

6. It is recommended that the services of the welfare board may be extended by:

a) Increasing the staff of the board as rapidly as qualified personnel can be secured,

b) Securing a qualified Negro social service worker,

c) Employing a worker or consultant on juvenile

delinquency.

d) Adding one Negro child welfare worker to the staff.

e. Empowering the board to certify persons to enter the state insane asylums.

7. It is recommended that the investigation and certification of patients for free or part-pay treatment be handled by the board.

8. It is recommended that the board should maintain an active supervision over the County Home for the Aged and Infirm and the county jails.

9. It is recommended that the Board of Public Welfare take articulate measures to combat the current views that the Negro population holds, that the board operates for the benefit of the white group only, and is not supposed to do anything for the Negro.

10. It is recommended that birth control information and instruction be disseminated through the hospital.

11. It is recommended that units should be provided in connection with the hospital for caring for a small number of tuberculosis patients and mental patients, until such time as a sanatorium and a mental hygiene clinic can be established in the county.

12. It is recommended that the Board, in union with the school, work out a method for the enforcement of the school attendance law.

13. It is recommended that the schools take the initiative in coordinating the services of all agencies of the community interested in the youth problem.

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THE ORGANIZATION AND ADMINISTRATION OF HEALTH,  
PHYSICAL EDUCATION, AND RECREATION IN THE  
ATLANTA UNIVERSITY CENTER

Juanita G. Pierce, Thesis (Ed.D.)  
New York University, 1945

The Atlanta University Center is comprised of all institutions located in Atlanta, Georgia, concerned with the higher education of Negroes. These schools are: Atlanta University, Clark, Morehouse, Morris Brown, Spelman, and Gammon Theological Seminary. All except Gammon were included in this study.

The Problem

The problem was to analyze the health, physical education, and recreation curricula of the institutions comprising the center and to propose a co-ordinated plan of organization and administration.

Sources of Data

The standards formulated by W. L. Hughes<sup>1</sup> for administering health and physical education in colleges, supplemented by the standards in athletics for girls and women,<sup>2</sup> were utilized to evaluate the curricula surveyed. To study the programs of health, physical education, and recreation offered by the schools in the center, a check-list survey was prepared and personally administered, teachers of health and physical education were interviewed, and college bulletins were surveyed.

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<sup>1</sup>W. L. Hughes, The Administration of Health and Physical Education in Colleges. New York: A. S. Barnes Company, 1935, pp. v-357.

<sup>2</sup>National Section on Women's Athletics, A.P.E.A., Standards in Athletics for Girls and Women. Research Quarterly of the American Physical Education Association, VIII (May, 1937), p. 17.

### Summary of Data

1. Morehouse College, for men, is the only school in the center which offers a major in health and physical education.

2. The course offerings in hygiene and the requirements regarding personal and community hygiene in all schools fail to comply with the standards.

3. The intramural program for women, in each school, is limited to a few sports, and only two schools participate in any form of extramurals. Moreover, no consideration is given to NSWA standards in the conducting of athletics.

4. Adaptive physical education, for the atypical individual, is offered by only one school, and its program does not conform to accepted standards.

5. There are no organized programs of general recreation, and no school offers professional courses in recreation.

6. Only one institution has a gymnasium, one provides a cinder track, and neither provides a stadium, adequate play fields, tennis courts, and swimming pools.

7. No school in the center provides adequate facilities and equipment for examining rooms, corrective rooms and dance studios.

8. Only one school has an infirmary, however, it is used by one other school, and a third school provides infirmary space in its dormitories.

9. No school employs a full-time physician to direct the activities of the health service, however, all four schools employ part-time physicians.

10. No school has an organized program designed to supervise the sanitation of student environment.

### Recommendations

On the basis of the evidence presented in the summary of data, a co-ordinated plan of organization and administration is proposed. This proposal includes: first, suggestions as to projects which

should be jointly sponsored, and secondly, suggestions to each school for developing its own resources. It is suggested that a unified Department of Health, Physical Education, and Recreation be organized as a unit of the School of Education of Atlanta University. To begin with, this department should undertake the following projects:

1. A teaching major in health and physical education should be offered at both the graduate and under-graduate levels.

2. All activities designed to render health services to students of all schools in the center should be organized and administered by a joint health service. Spelman College infirmary should be adequately equipped and staffed to be utilized for this project.

3. A program of general recreation should be organized and administered by a co-ordinating council on recreation comprised of representatives from each institution.

4. A common physical education plant should be erected which is adequate to serve the major department as well as the students enrolled in the service programs in all schools.

5. An exchange of teachers and course offerings should be effected which would tend to eliminate all duplication and competition.

In order to be a strong partner in this cooperative enterprise, each school should develop its own resources; hence, separate recommendations were made for improving the curricula in each school. These recommendations were made in light of the findings relative to the specific school, but, in general, the following are apropos for all schools in the center.

1. Each school should devise policies and procedures aimed at facilitating the efforts of the joint health service.

2. Each president should appoint an advisory committee on health, composed of deans, personnel officer, a physician from the joint health service.

and faculty members from departments closely related to health.

3. Each school should increase its course offerings and requirements regarding personal and community hygiene.

4. Each school should expand its instructional program for required physical education, and these classes should meet at least three times per week.

5. Each school should expand its program of intramurals, for girls, and should organize extramural competition for women in the form of play days and sports days, at least with the other schools in the center. All activities included in these programs should be conducted so as to conform to NSWA standards.

6. Each school should provide a program of adaptive physical education activities for atypical students.

7. Each school should appoint a recreation council for the purpose of carrying out the plans of the unified department as well as planning activities for its own students.

It is further recommended that a permanent committee be established, representing all the schools in the center, for continued study of local problems in the light of our own experiences and the experiences of similar institutions. This committee should be constantly alert to additional projects which lend themselves to being jointly sponsored.

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THE EFFECTIVENESS OF TEACHING BUSINESS ARITHMETIC  
AS A SEPARATE SUBJECT AND AS AN INTEGRATED  
PART OF JUNIOR BUSINESS TRAINING

William M. Polishook, Thesis (Ed.D.)  
New York University, 1945

The Problem Defined

(1) How much and how well do students know arithmetic upon entering the business arithmetic course or the junior business training course in which business arithmetic is integrated in the ninth grade; (2) after a year of junior business training which runs concurrently with a course in business arithmetic; and (3) after a year of junior business training in which business arithmetic is integrated? (4) What differences are there between the amount and quality of achievement in business arithmetic when it is integrated with junior business training and when it is learned as a separate subject?

Origin of the Problem

This problem originates from the controversial position of many educators that the ninth grade is no place for a repetition of the fundamentals of arithmetic except incidentally as they are necessary, but that it is a proper place to emphasize the application of arithmetic to business situations. Some business educators believe that more effective learning of business arithmetic may be achieved by integration and that the best interests of business education students can be served by correlating arithmetic with business situations. Other business educators doubt the wisdom of this.

Procedure

1. Six high school texts in business arithmetic were analysed by actual count of space devoted to each topic. The preliminary form of the achievement test used in this study was made up of five divisions

of subject matter.

2. The preliminary form of the test was validated by submitting it to a jury of eight business men selected by the Secretary of the Chamber of Commerce.

3. The preliminary form was administered for tryout purposes to 120 testees in May, 1943.

4. The preliminary form was revised in light of the tryout experiences and the reactions of business men who studied the test.

5. Schools and personnel to be tested were selected by a representative of the Department of Public Instruction, Trenton, New Jersey.

6. The first test was administered in October, 1944, to 302 pupils in seven schools representing the separate courses (Group A) and 367 pupils in five schools representing the integrated courses (Group B).

7. The background questionnaire was administered in October, 1944, to gather information about the social, economic, and ability statuses of the participating groups.

8. The final test was administered in May, 1945, to the groups tested in October, 1944.

#### General Conclusions

The background questionnaire found some differences between the two groups.

Group A and Group B began the school year with practically the same knowledge of business arithmetic as shown by the findings. The accuracy quotients which were the average score divided by the average number of attempts, were almost identical (separate courses, .5331; integrated courses, .5397). Group A attempted 4 per cent more problems than did Group B.

Those who studied business arithmetic for a year in the ninth grade as a separate subject attempted 10 per cent more problems than those who studied under the integrated plan. The accuracy quotient was low (.6337). The accuracy quotient was also low (.5678) for those who studied business arithmetic for a year as an integrated part of junior

business training.

Both groups made progress as a result of a year of study of business arithmetic. The pupils of the separate courses did better than those in the integrated courses, but in neither case did pupils achieve competency in the subject of business arithmetic.

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A CRITICAL ANALYSIS OF THE VOCABULARY OF THREE  
STANDARD SERIES OF PRE-PRIMERS AND PRIMERS  
IN TERMS OF HOW THE WORDS ARE USED

(With Special reference to the Language Problem of the Spanish-speaking Children of Puerto Rico)

Pauline Martz Rojas, Thesis (Ph.D.)  
University of Michigan, 1946

Nature of the Study

This study seeks to explore the sources of possible difficulty, for the Spanish speaking child, of standard materials prepared for native English speaking children engaged in learning the process of reading in their vernacular. These materials assume that the child has a command of the words which they contain in all of the various forms and usages in which they are presented; and since the main task of the pupil is intended to be learning to recognize the graphic representations of the different combinations of sound which make up these words, the vocabulary list records the words as graphic representations, regardless of how they may be used. That is, look in Look and see, Look at mother, and It looks like a cat is recorded once only in the vocabulary list, although each one of these usages differs linguistically from the other two. And a word like pretty used in a pretty book and in pretty soon appears once in the list for the same reason. The Spanish speaking child in Puerto Rico lives in an environment in which he has no contact with English outside of school; and in school his experience with the language, before he begins to read it is, limited to what he can get in a forty-five minute class period during one and one half school years. Since he approaches standard pre-primers and primers with this extremely limited experience with English, the

number of words on the vocabulary list for a given book is not a reliable measure of the learning burden of that book for him, in reference to anything except recognition of the graphic symbols it contains. In contrast to the limited experience which the Puerto Rican child has as a basis upon which to approach these reading materials in English, the English speaking child is assumed to have had a linguistic experience of approximately six years in a natural English speaking environment when he approaches the same materials.

#### Method

The content of the pre-primers and primers in The Curriculum Foundation series, in The Children's Own Readers, and in The Happy Road to Reading were analysed word for word in respect to variations in form and meaning which, constitute possible sources of difficulty for Spanish speaking children because the corresponding usages in Spanish differ from those in English. To accentuate the differences in these varying usages, the equivalent of each was given in the familiar Spanish of children in Puerto Rico. Each usage was called a vocabulary item. The total number of vocabulary items of a given series was taken to represent the learning burden of the books in that series for the Spanish speaking child. The frequency of appearance of each usage was also recorded and tabulated.

#### Results

The results show (1) a wide discrepancy between the number of words and the number of vocabulary items, (2) that the repetitions of a particular item respond to the demands of the subject matter and not to the linguistic needs of Spanish speaking children, and (3) that the usages vary in number and kind from series to series. The first result means that these materials contain a learning burden for the Spanish speaking child far in excess of what the number of words would lead one to believe. If the Spanish speaking child does not know these items as

used in English, he cannot read the material with understanding. That he already knows them is too much to assume in view of the short time he has had to learn English. The second result, means that these materials are not adequate for teaching English to Spanish speaking children because the items which appear and the repetitions of the same are not arranged to give either systematic practice on vocabulary or practice on the fundamental patterns of grammatical structure in English, but appear at random depending entirely upon the demands of the subject matter. Consequently, a difficult form in English for Spanish speaking children may appear only a few times and an easy one many times. The third result means that the books cannot be indiscriminately interchanged because they do not contain the same items in all cases.

#### Conclusions

The implications to be derived from the data are that materials for use with Spanish speaking children should be specially prepared in order that they will provide the help these children need in order to master the fundamental patterns of English in respect to both sound and grammatical structure. To use materials designed to teach reading to children whose vernacular is English is inefficient (1) because it assumes linguistic experience which the Spanish speaking children in Puerto Rico can not be presumed to have had and (2) because it does not provide the means whereby they can get the practice they need in a form which insures efficient learning and teaching.

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# THE PRE-SERVICE PREPARATION OF ELEMENTARY TEACHERS AT NEW YORK UNIVERSITY

Clara Skiles-Platt, Thesis (Ed.D.)  
New York University, 1946

## The Problem

To determine criteria for judging curricula designed to educate prospective elementary teachers for teaching in the public and private schools in New York and neighboring states, and to set up an experimental curriculum in light of the criteria and to evaluate it as it functioned in the four-year period, 1936-1940.

## Procedure

A survey was made of numerous educational organizations in the pre-service preparation of elementary teachers, and the principles, recommendations and suggestions, which resulted from these findings.

Curriculum 1 for prospective elementary teachers was set up as an experimental curriculum under the following principles and plans:

1. Curriculum changes took into account problems, changes and basic needs of contemporary American life by reorganizing areas and courses of general and professional education to deepen and broaden and give social orientation to the academic and cultural offerings and to supplement them with a variety of experiences, materials, and field work.

2. Curriculum changes took into account the needs of prospective teachers as individuals, as citizens, and as potential members of the teaching profession.

3. Curriculum 1 set up selective admissions and guidance.

4. Curriculum 1 organized the curricular con-

tent and materials to promote an understanding of the basic concepts, principles, and relationships of knowledge and human welfare through the fields of social studies, science and mathematics, English, music and art, and human growth and development.

The functioning of Curriculum 1 from the freshman through the senior year was recorded and described in detail under the following categories: Selection of students; guidance; curriculum content; organization and activities; field work, community surveys, experiences with children, and student teaching.

Throughout the four years the general and professional education programs were centered around studies of needs, problems and relationships of people. The freshman program dealt with "studies of people" which were related to the various national backgrounds of the students. In the sophomore year the studies of people were continued, but American life and culture were emphasized. In the junior year the study of people was organized around definite groups of people in communities and schools in and near New York. The final phase of the four-year study of people in the senior year dealt with the understanding and skills needed for educational leadership in schools and communities. In all of these studies of people the areas of English, music, art, science and human development were closely related to and integrated with the central theme. Excursions, surveys, investigations, observations, discussion, and other activities involving direct contact with people provided the experiences necessary to give these studies meaning, reality, and application. The laboratory method of providing experiences with children in and out of school began in the sophomore year and continued throughout. Major activities and achievements of the students who completed the four-year program follow:

1. Each student taught five days per week from the opening of school in September through the middle of May.

2. Each student taught one term in a public school and one in a private--one in the lower elementary and the other in the upper.

3. The students surveyed the communities in which they worked--housing, recreation, economic status, business, industry, nationalities, religions, and any other factors influencing the lives of children and parents.

4. Each student studied her class--ages, general abilities, interests, past records, case histories, previous school experiences, home backgrounds, and important teacher comments which might serve as principles and point to problems.

5. Each student took responsibility in all classroom activities including music, arts and crafts, playground, luncheon service, rest periods, assembly programs.

6. Each student planned and assisted in children's trips and other field work.

7. Each student attended or had some part in faculty, parent, and community programs.

### Recommendations

The study includes recommendations deemed fundamental for guidance in setting up undergraduate programs for the preparation of elementary teachers.

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A COMPARATIVE STUDY OF CONSOLIDATION  
AND NON-CONSOLIDATION OF SCHOOL  
DISTRICTS IN VALLEY STREAM

Ellis F. White, Thesis, (Ed.D.)  
New York University, 1945

Valley Stream, an incorporated village of New York State with a population of approximately 20,000 persons, is divided for purposes of education into three elementary school districts. A superimposed central high school district is maintained by the elementary districts in order to provide adequate facilities for secondary education.

The question of whether or not it would be wise to consolidate all districts into one integral unit has long been recognized, but a clear picture of the many factors involved had never been gained. The document abstracted herein compares the school systems of Valley Stream as they exist and would continue to exist under the present organizational pattern with the kind that would evolve as a result of consolidation. Since consolidation could be effected under the laws of New York State either by centralization or a change to a village superintendency, the comparison involves three patterns rather than two.

Consolidation is given to six specific problems which, when treated separately, serve as an organized means of arriving at a solution of the main problem. They are concerned with a comparison of the present systems with each type of consolidation with respect to:

1. The kind of organization for administration that is needed.
2. The kind of organization for supervision that fits the needs of each kind of organization suggested.
3. The degree to which there would be dependency

on the village government for financial support or operation.

4. What effects on the present school personnel would be with reference to salary schedules, additional or lessened personnel and tenure rights.
5. Possible complexities in providing for future building needs.
6. The cost of education.

Solutions for the first two specific problems are presented as a result of comparing the existing organizational patterns with what would evolve by using descriptions and charts found in widely used books in the field in effecting a consolidated pattern. Experiences of other consolidated and consolidating areas in New York State prove to be of value and plans presented are limited in accordance with the information contained in Education Law of New York State relative to what must exist and what may not.

Statutory regulations again are consulted in determining the effects of consolidation on dependency upon village government, and experiences of other communities are used in comparing what would exist under non-consolidation with the two kinds of consolidation.

Mandated salaries and tenure laws are compared in determining the effects on school personnel and from the plans for administration and supervision earlier presented, the size of the staff needed could be given.

The estimations of local realtors are presented in defining the salary trend in Valley Stream, and the location of available property for building purposes is analyzed in order to learn where expansion will take place. With these factors analyzed, the need for expansion is shown and the locations of new schools are estimated for the conditions that would exist under each pattern of organization.

Financing education is discussed from the point

of view of state aid attainable under each type of organizational arrangement. The comparative liabilities and assets of the elementary districts, and their building needs are taken into consideration.

The findings demonstrate that there are few differences between organization by centralization and as a result of changing to a superintendency, the only one of importance being that a superintendency district would become removed from the jurisdiction of the county district superintendent.

The differences between non-consolidation and consolidation (by use of either of the two possible patterns) were found to be important. First, definite advantages in the kind of education that could result from consolidation are observed, and a second point demonstrates financial advantages in pooling resources to meet the need for economical plant expansion deemed necessary as a result of an impending increase in population.

Because only a small proportion of the school personnel would be affected by consolidation, and dependency upon village government need not occur, these two factors are discovered to be relatively unimportant.

Since the findings indicate possible advantages to be gained by effecting a consolidation, it is recommended that the central high school board of education give serious consideration to the feasibility of such a move. Should they, along with others in the community, find consolidation desirable, they are urged to ask for special state legislation defining the kind of educational system needed to create a practical organizational pattern.

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## BASIC MUSIC FOR THE SINGLE CURRICULUM

Prince Ahmed Williams, Thesis (Ed.D.)  
New York University, 1946

### The Problem

The purpose of this study is to determine the content of a suggested course in music to be required of all students enrolled in the Single Curriculum Program for the preparation of teachers in the colleges of West Virginia.

### Historical and Philosophical Significance

The State of West Virginia is in the process of making a change of emphasis in teacher education. A plan has been instituted whereby all prospective teachers (elementary and secondary) follow a unified foundational and professional program of teacher education amounting to ninety-six semester hours. This plan is known as the Single Curriculum. It is based on the present view of learning, namely, the nature of learning at any level is basically the same and that teachers of children of different age groups are concerned with many common problems. It assumes that because of these commonalities, it is possible to prepare in four years for teaching on either the elementary or secondary level. Under this concept certain problems in music education are common to all classroom teachers. However, since it is not generally known on which level the prospective teacher will serve, and since provision is made elsewhere in the Single Curriculum for those students who plan to become specialized music teachers, concentration is centered on the elementary level.

### Basic Principles and Procedures

A general knowledge comprising music skills and

the aims of singing, a general knowledge of guiding principles in the art of listening, a general knowledge of creative music activities, and a general knowledge of theories and practices in rhythmic activities should all be a part of the equipment of elementary classroom teachers. This study sets forth certain basic principles and procedures for educating classroom teachers in the art of elementary school music teaching.

The problem of singing as related to elementary teaching receives first consideration. Significant conclusions on the ability of children to sing form one of the criteria by which the discussion is guided regarding the care and training of the child's singing voice. Also incorporated is a fundamental set of principles for voice training for teacher and pupil. Lastly, aims and procedures of music reading are outlined. Points pertaining to the teaching of music reading by the syllable method and the non-syllable method receive special consideration.

Under the heading of listening, findings are discussed which form the criteria for certain compositions selected for their psychological adaptability for elementary teaching, and also, for their value in the formation of a cultural musical background for the prospective teacher. Suggested procedures for the presentation of study material for these compositions are also included. In addition, for their relative merits for rhythmic and creative activities for children, special recordings are listed.

There is some disagreement among educators as to the meaning of the term creative music. One school of thought advances the idea that creative music applies to the actual composition of music. A second interprets creative music as actually expressing feeling through the interpretation of music. A third takes the position that the learning process is itself creative, thus every individual is capable of being creative in a measure. This last in-

terpretation more or less concerns the classroom teacher because it does away with the assumption that only the highly skilled music teacher can encourage and foster creative activities in music. This study points out how creativity can be fostered through song interpretation, listening, music reading, rhythmic activities, and instrumental experience. Procedures for the composition of original songs receive special consideration, and an art of developing original tunes with the keyboard as a creative medium is outlined in detail.

Rhythm is probably the first and most instinctive of the musical elements to which the child responds. With this view in mind this study takes the position that, without explanation, pupils must be led to discover through their movements, the mood of the music, the swing of the phrase, the reason for meter signatures, the reason for measure bars, and the different kinds of notes used to express rhythmic ideas. Definite procedures for accomplishing these objectives are suggested.

Finally, the average classroom teacher will be able to organize and conduct the rhythm band because, while it is an asset, a high degree of technical musical skill is not a necessity for carrying out this activity. The ability to play the piano is of inestimable value, but if this is not among the teacher's accomplishments, recordings of suitable music are available. A selected list of these recordings is included along with pertinent information regarding the organization and conducting of the rhythm band. A list of practical suggestions concerning problems dealing with the rhythm band completes the study.

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## EDUCATIONAL PSYCHOLOGY

### SCREENING THE NEUROPSYCHIATRICALY UNFIT SELECTEE FROM THE ARMED FORCES

Arthur Weider, Thesis (Ph.D.)  
New York University, 1945

#### Statement of the Problem

The problem of this investigation was two-fold: first, to describe the neuropsychiatric interview given to all selectees at Induction Stations of the Service Commands; and, second, to develop a short paper and pencil, group, self-administering, psychological-psychiatric questionnaire which would supplement and objectify the procedure of the neuropsychiatric interview.

#### Significance of the Problem

It has been said that each person with a neuropsychiatric disorder revealed subsequent to induction into the service cost the government \$30,000 to \$35,000; that twenty-seven hospitals, with a capacity for 33,000 patients, are devoted to the care of World War I veterans with neuropsychiatric disorders; that approximately one billion dollars has been spent on the care of these patients; and that sixty per cent of all ex-members of military services requiring hospitalization are admitted for neuropsychiatric disabilities.<sup>1</sup> Hence, a procedure which would screen the borderline and proved inadequate before induction should lessen the incidence of illness in the Armed Forces. To detect such persons is desirable because neuropsychiatric and psychosomatic disorders have become important military problems. Furthermore, because of a paucity of neuropsychiatrists, devices that are time and energy-saving are essential

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<sup>1</sup>David J. Flicker, Psychiatric Induction Examination, War Medicine, II (November, 1942), pp. 931-943.

### Delimitations

The present study was limited to cooperative and literate persons who were able to complete the inventory satisfactorily. Secondly, the inventory was applicable to the male sex between the ages of 18 to 38.

### The Method

Through contacts with the Armed Forces Induction Station Authorities in New York City and Boston, the results of the brief psychiatric examination which was given to a series of 1,000 selectees as part of their pre-induction "processing" were made available to the investigator. A personality questionnaire consisting of 64 items, devised by the investigator, was administered to these 1,000 subjects. In order to determine the differentiating ability of these items the questionnaire was given to a group of 210 neuropsychiatric patients at the Halloran General Hospital. Thus, for each question, it was possible to compare the responses of the patients to a group of selectees accepted after brief psychiatric interview for military duty. An item by item analysis was made and a critical ratio for each question was determined.

### Results

The results of the item analysis indicate two questions that have critical ratios between 2.5 to 2.9 while the remaining 62 items have critical ratios of 3.0 or higher. Henry E. Garrett<sup>2</sup> states that it is customary to consider a critical ratio of three significant (virtual certainty) since there is only one chance in a thousand that a difference of three

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<sup>2</sup>Statistics in Psychology and Education, p. 213.

standard deviations will arise when the true difference is zero. Accordingly, the investigator considered the items of the questionnaire (Form N) significant and that they should therefore have a place on a clinical inventory designed to differentiate neuropsychiatrically fit from unfit selectees.

To afford some indication of Form N's reliability, certain tetrachoric correlations based on the split-half, odd-even method were computed. Correlations for three score levels were determined; the coefficients ranged from  $r_t$  .83 to  $r_t$  .93 indicating the high reliability of Form N.

Since the 1,000 subjects who were examined by the questionnaire were also given a psychiatric interview independently it was possible to compare the results of these two methods. Accordingly, for each selectee the psychiatrists' decision to accept or reject him was taken as the criteria in validating Form N. A subject with a score of 15 significant responses, or one or more "stop questions"<sup>1</sup> was considered as failing Form N. A four-fold contingency table with the results of Form N against the psychiatrists' decision was drawn up; the selectees were sorted into one of the four possibilities, a) pass Form N and psychiatric interview, b) pass Form N and fail psychiatric interview, c) fail Form N and psychiatric interview, and d) fail Form N and pass psychiatric interview. The tetrachoric correlation was  $r_t$  .89 indicating a high degree of relationship between Form N and the brief psychiatric interview suggesting that Form N is measuring the same qualities that are being measured by the psychiatric interview. The Chi-Square Method revealed an association between Form N and the brief psychiatric interview over and above a chance relationship ( $P = .01$ ).

Of the 1,000 selectees, 100 were rejected and 900 were accepted for military service after a brief psychiatric interview. Of the group so rejected,

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<sup>1</sup>"Stop questions" are so designated because of their psychiatric significance, since any selectee who exhibits such a major symptom must be referred for further examination to the examining psychiatrist.

Form N concurred with the psychiatric opinion; that is, both methods agreed to reject 89 selectees. Thus it might be said that Form N detected 89 per cent of neuropsychiatrically unfit selectees. Of the group accepted, Form N concurred with the psychiatric opinion concerning 790 registrants. Finally, Form N missed 11 men rejected by the psychiatrists, while 110 men might be considered as "false positives" (psychiatrically acceptable men who fail the questionnaire). Stated another way, 199 men or 20 per cent of the population failed Form N and would be referred for psychiatric appraisal; included in this group would be 89 per cent of men who would be rejected by a neuropsychiatrist because of unfitness.

### Main Conclusions

1. There is need for an instrument that could save both the time and the energy of the over-worked psychiatrist whose task it is to examine selectees for the Armed Forces at Induction Stations.

2. Form N is a reliable and valid questionnaire to supplement and complement the brief psychiatric interview given to selectees. It is self-administered, quick, and easily scored. It can be given individually or to groups of persons simultaneously. The brevity of Form N, its simplicity of analysis, and its focus on neuropsychiatric problems would seem to make it a useful tool for screening the emotionally unfit from the Armed Forces.

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Garrett, H. E., Statistics in Psychology and Education. New York: Longmans, Green and Company, 1937. p. 493.

<sup>1\*</sup>For complete bibliographical sources, see the Dissertation.

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## LITERATURE, AMERICAN

### SELECTED READINGS BY NEGRO AUTHORS FOR THE YOUNG ADOLESCENT

Ruth Marie Thomas, Thesis (Ed.D.)  
New York University, 1946

#### The Nature of the Project

The project, Selected Readings by Negro Authors for the Young Adolescent, had its origin in the desire to tap the wealth of material found in Negro literature for the school population. In the light of the adolescent's interests and the material available, the selections were confined to fiction, poetry, and biography published in the United States since 1915. The justification for this project lies first in presenting to the reader human experiences in such a way that they bring pleasure and enrichment. Second, no such anthology by Negro authors for the adolescent has been compiled. Third, it contributes directly to intercultural education.

#### The Procedures Used

The procedures for this study were: (1) Surveying Negro Literature, (2) Selecting Materials by Certain Criteria, (3) Getting Permission from Publishers to Mimeograph Materials, (4) Putting the Readings into Book Form, (5) Preparing a Questionnaire to Secure Reactions of Readers, (6) Submitting Readings to Young Adolescents, (7) Submitting Readings to a Panel of Seven Judges, (8) Determining the Final Compilation.

#### Selection of Materials

The finished book consisted of five works of fiction, forty-six poems, and sixteen biography selections. Ninth-grade pupils from twelve schools in eight states cooperated in the study. From two

hundred and thirty-seven returned questionnaires, one hundred from white readers and one hundred from Negro readers were selected. After analyzing and tabulating the opinions of the children and judges, the writer in order to select the approved items arbitrarily set up the following bases: (1) The critical level of approval for the average of both groups is 75 or above. (2) The critical level of approval for each group is 65 or above. (3) No critical level of approval was set up for the judges. The items of the three literary types (poetry first and prose second) were then arranged in rank order from the highest to the least average approval. No item received more than three negative votes from the judges and only a few of these negative opinions dealt with tolerance. Although the judges' opinions were not used in eliminating items, the judges contributed greatly to the study, and full treatment of their opinions is given.

#### Analysis of Readers' Reactions

The most important reasons given for liking the thirteen poems with an average approval from 85 up were familiarity with subject matter, narrative element, didacticism, humor, and literary appreciation. The fourteen poems with an average approval from 75 to 85 were less familiar to the children and required a greater amount of maturity than the best liked poems. The eighteen eliminated poems are probably indicative of the limitations of the young adolescent's interests and comprehension. Dialect and difficult words taxed some readers. The sad and the bitter shocked many children. Out of the twenty-one prose items only two were eliminated: a cat fantasy considered by many as "too childish" and a fragmentary biography selection. The prose selections presented many interesting characters, humorous and exciting happenings, strange places and customs. Negro readers unanimously approved of the book as a whole. Seven white readers disliked it more than they liked it. Two expressed no opinion.

Suggestions and Recommendations

Suggestions for using these materials are that they can be used as a library book, a text for junior high school, a source for discussion of personal and family problems, and a source book of intercultural readings. Six recommendations are: (1) Reading interests and difficulties of the young adolescent should be considered in compiling material for them. (2) More writers, white and Negro, should be encouraged to write on the subject of the Negro for all grade levels. (3) More people interested in the training of youth should be encouraged to compile materials on the Negro by Negro and white writers for all levels and for all children. (4) As often as possible these readings should be submitted to children on the respective levels. (5) Pupils should have the opportunity to read extensively Negro literature rather than be subjected to a few popular selections. (6) The schools should put into their curriculum intercultural readings which will bring pleasure to the readers, enrich their experiences, and broaden their sympathies.

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## LITERATURE, ENGLISH

### THEORY OF THE ODE APPLIED TO THE ENGLISH ODE BEFORE 1700

Isabel Broderick Rust, Thesis (Ph.D.)  
University of Michigan, 1928

Any study of poems known as odes and of the limited material discussing such types shows that there are qualities usually or frequently present that make these poems fill particular human and literary needs.

I set myself the task of making an extensive study of poems in several languages where authors or editors had given the title of ode or like name.

Gradually I came to feel that the chief distinction between odes and other poems lay in purpose and in spirit and that form was important only in that the ode, more than most poetry, demands that the manner be especially well fitted to the matter.

My problem then became one of discovering and stating what were the distinguishing marks, so that odes could always be recognized, classified and evaluated, whether or not the titles were given.

Varied periods of time, occasions, languages, civilization and especially purposes can be narrowed down to these essentials, the ode is lyric communication, with purpose of celebration, commemoration, interpretation or appeal. One or more of these purposes will be present.

The brief definition is expanded and explained in Preface and Introduction and applied throughout the paper.

Chapter Two discusses Lawrence Minot's war hymns as showing (in the Fourteenth Century) the characteristics of the ode.

The Elizabethan Ode (Chapter Three) includes simple love songs as well as complex marriage odes.

These are excellent for analysis, though the period offers little information on what constitutes an ode.

The Fourth Chapter deals with the Regular ode of the first part of the Seventeenth Century. Simpler poetry continues but there is growing ceremonial, perhaps religious tone, as in Crashaw and Milton. The true Pindaric, complex and with regular correspondence of strophe, antistrophe and epode, was written by Ben Jonson, but had little influence on others. (Maffei Barberini--before he became Pope Urban VIII--antedated Jonson in his Poemata but wrote in Latin Pindaric.)

With the later Seventeenth Century (Chapter Five), the high point of Irregular Odes is reached in Dryden's Symphonic Odes and Milton's Choral Odes in Samson Agonistes.

Abraham Cowley's Pindariques (Pindariks) set a pattern long followed for irregular odes.

As most distinctive forms for the ode are established by 1700, my application of the theory stops here with English Poetry; however, the material that follows is especially pertinent to the subject of odes.

Appendix A contains notes, analyses and poems in English and French, with Hymns of Prudentius (Fourth Century Latin) Italian Canzoni and Latin glosses.

Appendix B consists of five studies:

1. Theories of Victor Hugo and of J. Gottfried Herder with parallels in early and late English. (The first ode-like poem written in America--1683 (?)--is Salve Posteritas written in Latin by a German Pastorius. This illustrates one division of Herder's classification of the Hebrew Psalms.)

2. Quotations from classical Greek using such words as ode or hymn.

3. Words in Latin Literature carmen, ode, oda.

4. Uses of cognate words in the Greek of The Bible.

5. Some appearances of the word ode in Titles after Printing.

Such material is part of the basic study from which came my Theory of The Ode.

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## PHILOSOPHY

### JAIN COSMOLOGY AS ILLUSTRATED IN THE SAMGRAHAṆĪ SŪTRA

Mary H. Shimer, Thesis (Ph.D.)  
Bryn Mawr College, 1944

The Samgrahanī Sūtra is an illustrated Jain manuscript originally from Gujarat, India, and now in the possession of the Philadelphia Museum of Fine Arts. Its sixty-seven folios are of paper, oblong in shape, and illustrated in color with thirty-five cosmological paintings and diagrams. The text is in Prakrit with a running commentary in old Gujarātī above it. In the colophon it bears the date samvat 1720, i.e., 1663/4 A.D. and authorship is ascribed to Candramuni, pupil of Maladhārī Hemacandra.

The manuscript deals with Jain cosmology, and conforms closely to other Jain material dealing with this subject, both canonical and non-canonical. In the illustrations there is a close dependence on Jain iconographical tradition, and other recensions of the sūtra, now in India, show subjects and sequences of subjects similar to those in the Philadelphia example. Certain pictorial themes and conventions appear as well in material other than the Samgrahanī Sūtra series.

Although the various illustrated Samgrahanī manuscripts are similar in iconography, the pictorial style of the paintings in them differs greatly, because of their varying date and provenance, and the larger or smaller admixture of Mughal and foreign elements. The Philadelphia manuscript shows comparatively little of the latter influence and its pictorial sources can be found in the Jain manuscript style of the Early Western Indian school and in Jain sculpture.

The Sūtra opens with the customary formula of adoration to the five Supreme Beings of Jain

cosmology, illustrated in stereotyped form. The text (stanzas 2-49) then gives the duration of life (sthiti), dwelling place (bhavana) and body-size (avagahana) of gods, hell-dwellers, men, and animals. In conjunction with the text there are illustrations of the Vaimānika heavens, the Bhavanapati classes of gods, cities of the Vyantara gods, classes of the Vyantaras, and the seven armies of the Vaimānika gods.

Stanzas 48-66 give the measurements, life-durations and dwelling-places of the Heavenly Bodies (Jyotiṣas). The three illustrations included here are the Sun, Moon, and Rāhu, the Heavenly Draught Animals, Mount Meru, and the mountains of Nisadha and Nīla.

The geography of the earth is next discussed (stanzas 67-76). Dimensions of continents and oceans are given, their names, and the composition of the seas. The accompanying plates illustrate Jambudvīpa (the human world), Nandīśvara continent, Arunavara ocean, and Kuṇḍala continent.

Stanzas 77 through 89 give the movements of the Jyotiṣas, the Jain astronomy. The orbits of the moon are illustrated and the orbits of the moon and sun at the summer and winter solstices.

In stanzas 90 through 112 the dwellings of the Vaimānika Gods are described in detail and illustrated. Likewise the symbol or sign (cīhna) of each heaven is named and pictured.

The strides and gaits of the gods in motion are described in the next section (stanzas 113-123) and one gait (the caṇḍā gati) is illustrated. The next plate shows the eight chief wives of Indra, although, in this place, there is no accompanying explanatory text.

Exclusive of the hells below the earth this completes the formal cosmological description given in the text. The rest is mainly concerned with descriptions of the lives and habits of the gods and the conditions governing the progress of souls (jīvas) through the various regions. Stanzas 124-184 cover

the body-size of gods, their birth and death, birth of the jīvas, karma, eating, breathing, and marriage of the gods, and their clairvoyant vision (avadhi). Illustrated are ways of dying by which jīvas are born as Vyantara gods; birth of ascetics et cetera in heaven; the six figures of the body; the five types of marriage; the universe in human form; gods coming into existence, and clairvoyant vision among the gods and hell-dwellers.

Stanzas 185-235 describe the hells, giving their names, dimensions, divisions, and the punishments inflicted therein. Accompanying plates give a diagram of one of the hell-stages, the order of animals and man in hell, and punishments in hell. The leśyās (soul colors) are described and illustrated, as are the jewels of the Cakravartins and Vasudevas.

The final section of the manuscript (stanzas 236-304) gives the progress of life through innumerable forms to final perfection. The infinite divisions and subdivisions into which the Jains have classified life-forms are catalogued and described in summary form. This evolution is illustrated in diagrammatic form in the final plate, called the soul's journey to heaven by the straight and crooked paths. The last four stanzas summarize the preceding text and give the authorship and date.

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## PROPAEDEUTIC TO VALUE THEORY

James Ward Smith, Thesis (Ph.D.)  
Princeton University, 1942

Recent developments in general epistemology, which are largely consequent upon the vigorous advance of contemporary logic, have issued in an extremely precise method of analysis which I define as the method of statement analysis. Hitherto this method has been successfully applied only to statements of the so-called "factual" or "scientific" type. Whether because of a gratuitous assumption that factual and valuational statements are of totally different "kinds"; or whether because value theorists are ignorant of these contemporary advances, and epistemologists uninterested in value problems; this method of analysis has not been applied to valuational statements. It is the general thesis of this dissertation that this application can and ought to be made. The result of application is (1) a demonstration of numerous confusions which are virtually ubiquitous in so-called general theory of value, and (2) an indicated program for intelligent discussion based upon definitional precision.

Part One of the dissertation is entirely systematic. The basic categories of statement analysis are defined in terms of the distinction between the expressive, the indicative, and the referential functions of statements. The application of these categories to value theory issues in a precise delineation between the meaning of the terms "valuational attitude", "value", and "that which possesses value". This constitutes the basis for all further discussion. The major sections of the argument concern the relations between (1) expression and indication, (2) indication and reference, and (3) expression and reference. Accordingly the major headings of the

systematic argument will be as follows:

Chapter One: Values and Valuational Attitudes.

Chapter Two: The Possessor of Value and the Value Possessed.

Chapter Three: Valuational Attitudes and Possessors of Value.

The following subordinate theses will emerge:

1. The assumption that all value statements manifest an indicative function of one generic type is baseless, and the views to which the assumption gives rise are highly improbable. The generic problem in value theory is shown to be highly ambiguous as it is customarily formulated, and its proper formulation is given. The possible answers are then defined with precision and the grounds for their adequate defense are clearly stated.

2. Discussions concerning the intrinsic or extrinsic character of value, of value as a quality, of the means-end relation: all these are shown to be thoroughly obfuscated by failure to distinguish the numerous senses in which conditioning enters into valuational situations. These senses are clearly defined, and there follows a further statement of possible views and requisites for successful defense. The most important distinction to emerge, is that between material and axiological conditioning.

3. The problem of distinguishing "realms" of value is shown to be largely verbal, and the issues which underlie these verbal disagreements are ferreted out. The major contention which emerges is that realms of value should be defined solely in terms of expression and reference--i.e., in independence of the disagreement which centers upon the question of indication.

In the course of the development of these three subordinate theses, three major fallacies are shown to inhere in traditional discussions. (a) The fallacy of inferring from the nature of valuational attitudes (expressed by value statements) to the nature of values (indicated by value statements); (b) the

fallacy of inferring from the presence of material conditioning to the presence of axiological conditioning; and (c) the fallacy of confusing the notions, on the one hand, of intrinsic value and immediate valuation, and, on the other, of extrinsic value and mediate valuation.

Part Two of the dissertation is historical. It consists in the application of the systematic distinctions of Part One to certain of the most important historical positions. The design is to illustrate previous lack of clarity concerning the issues which have been systematically discussed. An analysis of the development of British Moralistic doctrine throws considerable light upon the nature of the fallacy of psychologism. Mr. John Dewey's very influential writings are found guilty of basic confusion on virtually every score. Finally, it is demonstrated that those points wherein the position of Immanuel Kant is basically unclear are precisely those points where his analysis is affected by failure to recognize the crucial character of the issues raised in this dissertation.

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POLITICAL SCIENCE

AN INQUIRY INTO THE PASSAGE OF THE  
HABEAS CORPUS ACT OF 1679

Helen Adams Nutting, Thesis (Ph.D.)  
Bryn Mawr College, 1945

With some Analysis of the Relation of the Act  
to Seventeenth Century Law Reform

This thesis is a study of the practices of Habeas Corpus during the middle years of the seventeenth century. It attempts to explain the background of the Habeas Corpus amendment act of 1679, and to estimate to what extent the act was a legal reform and to what extent a political measure. It describes the practices of the Privy Council, analyzes Habeas Corpus proceedings in the courts of common law and the expedients used between 1640 and 1679 which gave rise to a demand for further legislation.

In spite of intense interest in law reform during the Interregnum, further legislation on Habeas Corpus was not suggested in the projects of the period. Implemented by the recent Star Chamber act, Habeas Corpus was a recognized remedy, although, arbitrary imprisonment continued. The usual practice in political cases was imprisonment until release by order of Parliament, although the courts claimed and exercised the right to discharge such prisoners after dissolution. The expedient of transportation to possessions where the writ was not enforceable was designed to prevent court action and first used in 1654. The transfer of sovereignty to Parliament reduced drastically the discussion of abuses, and real interest in personal liberty revived only after the death of Cromwell.

During the early restoration popular emphasis was on security and stability rather than on personal liberty. Little complaint was raised against the many imprisonments ordered on suspicion of treason although the prisoners were often detained indefinitely without trial. In 1667, however, illegal imprisonment was charged in four cases, with three of them made grounds for impeachment. Agitation for further protection against arbitrary imprisonment followed immediately and continued until 1679. Although not originally a party measure, the issue of personal liberty was seized upon by the Country party and made an important part of its political platform.

Actual cases in courts of law had relatively little influence on the act of 1679. Vaughan's decision in Bushell's case was, however, important. He emphasized the lack of machinery by which justice could be done, by pointing out that the court of Common Pleas which had been given a limited power to grant Habeas Corpus and allow bail, had no power to obtain trial. The court was therefore in the position of being forced to return such a man to prison although his detention was clearly illegal. The Jenkes case, in which the writ was denied by every legal authority because the courts were not in session, occurred after the bill was drawn and had passed the House of Commons in two different sessions. The case contributed only two amendments, although its spectacular character influenced the passage of the act. The famous Shaftesbury Habeas Corpus had no effect on the provisions of the act although it too had indirect influence in emphasizing the importance of the bill as a party measure.

As a symbol of revolt against arbitrary government the Habeas Corpus act of 1679 cannot be overestimated. Habeas Corpus cases which aroused controversy by the injustices which they revealed were all instances of imprisonment for political offences. Political ideas were no more tolerated than were religious deviations, and it was the political

extremists and the critics of the government along with the men who opposed religious settlements who suffered illegal imprisonment. No seventeenth century government gave legal standing to an opposition party. In this absence of a theory of a loyal opposition, the increasing numbers of men who were unwilling to accept arbitrary government required protection against governments which held that to be in opposition was to be seditious and rebellious. Not even the Commonwealth was willing to trust all its prisoners to the courts. From 1640 to 1679 the opposition charged the government with illegal imprisonment every time it became organized and could obtain a hearing. The provisions of the Star Chamber Act were the work of the opposition of 1640; the abortive bill of 1660 followed the objections voiced in 1659 and the act of 1679 followed the rise of a more permanent opposition during the Restoration.

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## PUBLIC HEALTH

### A COMPARISON OF LIVEBIRTHS OVER 5½ POUNDS WITH LIVEBIRTHS 5½ POUNDS OR LESS

F. Herbert Colwell, Thesis (Dr.P.H.)  
University of Michigan, 1946

This study is a comparison of 526 livebirths over 5½ pounds at birth selected because of some known prenatal care, with all livebirths 5½ pounds or less at birth (which occurred in the community during the period, irrespective of prenatal care). All births included in the study occurred in Toledo, Ohio during the year 1943. The comparisons are made within the foregoing group with respect to selected factors.

The literature had shown what factors influenced the incidence of premature birth and these formed the basis of the comparison. The independent factors of mothers which were compared are: age; race; nativity; marital status; occupational status; socio-economic status; and residence. Other factors concerning mothers which were compared are: number of livebirths; number of pregnancies; previous stillbirths, abortions and premature births; symptoms and complaints of present pregnancy; body weight changes during pregnancy; diet histories of present pregnancies; diastolic blood pressure changes during present pregnancy; syphilis in mother during present pregnancy; prenatal care during present pregnancy; period of gestation; and military status of father of child. Factors of infant in present pregnancy which were compared are: sex; multiple birth; congenital malformations; and birthweight. The causes of these premature births and additional influences on the incidence of births 5½ pounds or less are listed.

Comparisons are made within the two groups studied, and no comparisons are drawn with findings of other studies, or of the general experience in the community.

Statistical differences were noted within the two groups compared with regard to the following factors: age of mother; race of mother; occupational status of mother; socio-economic status of father; average number of livebirths; average number of pregnancies; ratio of primiparas; ratio of previous infant losses; selected symptoms and complaints during pregnancy; body weight changes during pregnancy; diastolic blood pressure changes during pregnancy; prenatal care; period of gestation; and multiple birth.

Information presented relative to these factors is of much value to public health. The need is expressed for more exhaustive research on these factors in a large institution such as the University of Michigan Hospital with the several interested departments collaborating. Also, a study of data recorded in the Emergency Maternal and Infant Care Program on a local, state or national scale concerning this problem is suggested.

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## SOCIOLOGY

### HAITI ET SES FEMMES-- UNE ETUDE D'EVOLUTION CULTURELLE

Madeleine G. Sylvain Bouchereau, Thesis (Ph.D.)  
Bryn Mawr College, 1941

Cette étude a pour but d'examiner la condition de la femme dans la société haïtienne. La première partie est consacrée à une discussion de ses origines historiques; la seconde à l'examen de son rôle actuel économique, social et politique. La troisième partie traitant de l'éducation a déjà été publiée.<sup>1</sup> Les trois parties permettent d'envisager le problème féminin dans son ensemble.

La partie consacrée aux origines historiques est forcément incomplète à cause du petit nombre de sources authentiques. On trouve peu de renseignements sur la femme dans les livres d'histoire.

Afin de permettre aux lecteurs de mieux comprendre le rôle de la femme dans la société haïtienne, il a été nécessaire d'étudier brièvement l'organisation de cette société.

La partie traitant de la condition sociale de la femme est basée sur les observations générales de l'auteur approfondies par la présentation de quelques cas individuels et les résultats d'enquêtes faites sur les conditions de vie de 597 femmes des communautés rurales.

Ceux qui s'intéressent au problème de "l'acculturation" trouveront aussi dans cet ouvrage une illustration intéressante de l'évolution culturelle d'un peuple transplanté dans un nouveau milieu et soumis à des influences variées.

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<sup>1</sup>Sylvain Bouchereau. Madeleine G. Education des Femmes en Haïti. Port-au-Prince, 1944.

Résumé de l'ouvrage.

L'île d'Haïti a été successivement habitée par des peuples de race et de civilisation différentes. Certains ont disparu ou ont émigré ailleurs; pourtant chacun d'eux a laissé son empreinte et a contribué à la formation de la culture haïtienne. La situation de la femme peut être expliquée largement par ses origines historiques et raciales. Elle est principalement le résultat d'un mélange des traditions africaines et françaises et d'autres forces sociales qui ont agi sur elle.

La contribution indienne à la culture haïtienne consiste surtout en techniques matérielles. La femme a été le principal agent de transmission de ces techniques et grâce à elle certaines coutumes domestiques telles que la préparation des aliments indigènes, se sont conservées intactes.

Durant la période pré-colombienne, l'Indienne occupait une place importante dans la vie matérielle et économique, toutefois sa situation sociale était en général inférieure à celle de l'homme, cependant plusieurs femmes étaient à la tête de villages et même de royaumes.

Les conquérants espagnols introduisirent de nouvelles institutions, mais adoptèrent plusieurs techniques indigènes en les améliorant parfois. La population indienne fut en grande partie anéantie. La femme devint le jouet des passions des conquérants et une fusion des deux races s'opéra. La colonie devint entièrement sang mêlé et ne tarda pas à décliner à cause de la découverte des mines d'or de continent.

Pendant la période de colonisation française, les coutumes françaises et africaines furent importées dans le pays. Elles subsistèrent côte à côte et exercèrent une influence réciproque les unes sur les autres tout en se modifiant mutuellement, tandis que la grande institution de l'esclavage laissait son empreinte sur la vie coloniale, contribuant à désagréger les deux cultures et à établir un système de caste.

La femme qui, en Afrique, jouissait d'une situation importante, devint le jouet des passions de l'homme à cause de la répartition inégale des sexes. Ce relâchement des mœurs s'étendit à toutes les classes sociales. L'esclave astreinte, comme l'homme, aux plus durs travaux ne voyait son sort s'améliorer que si elle savait se concilier les faveurs de son maître. L'affranchie, négresse ou mulâtresse libre, vivait dans le luxe et dans la débauche, tandis que la femme blanche, presque toujours illettrée, menait une vie de paresse et de plaisirs.

Les esclaves révoltés contre leurs maîtres réussirent à conquérir leur indépendance. La nouvelle nation adopta les coutumes et institutions françaises; toutefois, dans les campagnes les traditions africaines dominèrent. La polygamie bien qu'officiellement abolie refleurit. Dans les villes la situation de la femme regléta plutôt les traditions françaises et les idées de l'église catholique. Les lois d'inspiration françaises et les idées de l'église catholique. Les lois d'inspiration française, la placèrent dans un état d'infériorité, toutefois au point de vue économique elle reprit bientôt le rôle important qu'elle avait joué en Afrique. L'occupation américaine introduisit de nouvelles idées et la situation de la femme se transforma sensiblement dans les villes.

Acquiellement la femme est un des facteurs primordiaux de l'économie haïtienne. A l'exception d'une petite minorité appartenant à l'élite, elle contribue comme l'homme à l'entretien de la famille et à la prospérité de la nation. Elle a aussi une place importante dans la famille, dont elle porte très souvent seule l'entière responsabilité, c'est elle qui prend soin du ménage et s'occupe de ses enfants mais en général son niveau de vie est très bas. Toutefois son statut civil et politique ne correspond pas à son rôle économique et social. La constitution ne lui permet pas de participer à la

vie publique et le code civil la maintient dans une situation nettement subordonnée tout en la protégeant et en cherchant à garantir ses intérêts. Jeune fille ou veuve, elle gère sa fortune comme elle l'entend, mais une fois mariée elle redevient mineure et perd le pouvoir de contracter et d'agir. Les droits de la mère sont sacrifiés à ceux du père. Hors du mariage, la jeune fille est insuffisamment protégée par la loi contre les convoitises masculines.

A la campagne, en dépit des lois, la femme a une influence considérable dans la famille et dans la société. Toutefois elle vit dans des conditions tout à fait primitives, livrée à la superstition, victime du concubinage et de la polygamie, ignorante des préceptes les plus élémentaires de l'hygiène et de la puériculture et dénuée de tout confort. Son seul moyen d'expression, le créole, langue orale, l'empêche de conserver les rudiments d'instruction qu'elle acquiert à l'école.

En ce moment l'Haïtienne prend conscience d'elle-même et réclame son émancipation.

Pour conclure l'auteur indique brièvement les améliorations matérielles, légales, économiques et sociales à apporter à la situation de la femme haïtienne afin qu'elle puisse contribuer au développement de son pays.

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YOUTH IN THE PHILADELPHIA LABOR MARKET:  
A STUDY OF THE VOCATIONAL PROBLEMS OF  
YOUNG WORKERS AND RELATED VOCATIONAL SERVICES

Sophia T. Cambria, Thesis (Ph.D.)  
Bryn Mawr College, 1945

Youth in the Philadelphia Labor Market is a survey of the employment and vocational adjustment problems faced by young workers in one highly industrialized and diversified labor market. Although the findings relate to a specific geographic unit, they are suggestive for other urban communities confronted with similar problems.

A review of the trends in the employment of youth in the Nation as a whole, which has served to introduce the study, reveals a decline in job opportunities for young workers. This decline has, in turn, been related to certain characteristics of the national economy, principally, changing industrial and occupational patterns, increasing productivity, and the widespread application of the techniques of the scientific management and personnel movement. These aspects of the economy have been viewed as the source from which rises the need for vocational services for youth, namely, vocational education, vocational guidance, and junior placement.

A detailed analysis of available statistical materials has provided a picture of the employment of young persons in Philadelphia. The major sources of the information are: 1) the United States Census of Population from 1910 to 1940, supplemented by figures from the Division of Current Surveys for 1941 to 1943; and 2) the statistical series maintained by the School District of Philadelphia, especially those of the Bureau of Compulsory Education and the Junior Employment Service. Combined, these data give the long-term trends in the supply and demand

for young workers over a forty-year period, and the short-term changes of the war years. Material has also been included which indicates the narrow occupational range within which youth finds its opportunities in peace and war, as well as data on the wage rates offered to the young entrant to the labor market.

A critical survey follows of the efforts made by the community to assist young persons in their adjustments to the labor market. These chapters consist of an historical review of the vocational education, vocational guidance, and junior placement facilities developed within Philadelphia, including programs of the war period. These services have, for the most part, been sponsored by the school system. Programs promoted by agencies other than the school, such as the National Youth Administration, the Civilian Conservation Corps, and apprentice training plans, have also been considered. The data for the analysis have been taken from school and agency records, the annual reports of the appropriate bureaus of the Board of Public Education, and interviews with school and agency administrators.

An understanding of the problem in terms of the individual has been supplied by a sample study of employed Philadelphia youth. One hundred and fourteen boys and girls constituted the sample and were interviewed to determine the extent of vocational adjustment, measured in terms of job satisfaction. The findings indicate that at the time of study, the Spring of 1942, many young persons were poorly adjusted to their work and that, in many instances, their dissatisfaction could be traced to a lack of, or a failure to utilize, vocational services.

The final chapter is concerned with planning for the future. The preceding analysis has shown that the community, if it wishes to avoid the economic waste of its youth, must plan for the reorganization and the expansion of its facilities for vocational

services. After reviewing the suggestions of the American Youth Commission and the National Resources Planning Board, the author lays the framework of a local plan, proposing the principles upon which a detailed blueprint may be based.

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A COMPARATIVE STUDY OF DELINQUENT BEHAVIOR  
MANIFESTATIONS IN 100 DELINQUENT AND 100  
NON-DELINQUENT NEGRO BOYS

Mary Huff Diggs, Thesis (Ph.D.)  
Bryn Mawr College, 1945

Juvenile delinquency among Negroes, like adult crime, has for some time been much greater than their proportion in the general population. This disproportion tends to exist in those areas where Negroes constitute an appreciable part of the population.

Several explanations for this have been offered, the most important among which are unfavorable home and community conditions to which these children are exposed, and the absence or dearth of facilities for supervised recreational participation.

Previous studies bearing upon this problem have examined various phases of it, but no particular one has provided an explanation of the dilemma presented by the fact that not all children residing in high delinquency areas become known to the competent authorities as offenders.

The present study is a comparative one, and deals with boys closely matched from the points of age, general intelligence, and location within the city. It is restricted to the offense of theft, and ideal type methodology was employed in the selection of the two groups of boys used. This is a procedure whereby the detailed characteristics of a construct are projected, and are treated as if they existed in reality. An application of it may be seen in the perfect lever of the physicist, or the geometrician's perfect angle, neither of which actually exist anywhere.

It was presumed that if differences really exist between delinquent and non-delinquent boys, they

would be more liable to appear if each group represented behavior extremes. That is to say, boys who had committed several thefts, thus indicating an established pattern of behavior, would be more likely to exhibit traits correlated with delinquency than would first offenders, and that differences between these traits in the non-delinquents would be still more clearly observable if this latter group were constituted of boys who, while similar to the delinquents in age, intelligence, and location within the city, were regarded in the community as conspicuous non-delinquents, so to speak.

The projected ideal delinquent situation included extensive family disorganization and incompleteness, poor economic status, and generally inadequate home environment. The results of the foregoing is the ideal delinquent. He is a poorly adjusted child at home, in the school, and in the community. He prefers street gangs and play groups to supervised recreational activities.

Efforts were made to measure possible differences in these two groups of boys and their situations through the use of Bell's Adjustment Inventory, Loofbourov-Keys's Personal Index of problem behavior tendencies, Stogdill's Delinquency Interview, and Leahy's Home Status Index.

It was found that the home environment of the non-delinquent was superior in every respect to that of the delinquent, with the greatest difference being in the areas of children's facilities provided, and economic status. They differ least in cultural and occupational status. The home environment of both groups is considerably lower than the minimum average established by Leahy.

Non-delinquent boys reveal more of personal disturbance and unhappiness in their relations to common American social institutions such as the school, the police, and courts. They do participate in the same types of delinquency as do the delinquents, the difference being in the extent of the

participation, and the existence in their homes of interested parents and relatives who intervene when there has been social misadventuring, and who smooth out such difficulties before they have had an opportunity to come to the attention of officers of the law.

In general adjustment both groups are very similar, with the slight favorable margin going to the non-delinquent. None of the differences were found to be statistically significant.

The use of the ideal type methodology in this study of delinquent behavior manifestations in closely matched groups of delinquent and non-delinquent Negro boys yielded interesting results. The concept of the type of home situations from which delinquents come was substantiated in the findings of the study. So was home environment. But in problem behavior the opposite was true. In matters pertaining to general adjustment achieved, the line of demarcation between the two groups tended to be tenuous, and not reliable.

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Part II

CUMULATIVE INDEX



## CUMULATIVE INDEX OF TITLES

Listed below are the titles of all doctoral dissertations available on microfilm, excepting those abstracted in this booklet, which have been published since the appearance of Vol. VI, No. 2 of MICROFILM ABSTRACTS (Dec. 1945). Abstracts of these dissertations have been published in special volumes of abstracts prepared for the individual schools. All may be identified by the letters and date following the reference. Previous cumulations will be found in earlier volumes, the latest is in Vol. VI, No. 2. A new cumulative index begins with this volume and will continue for three years.

(P.S....) Abstracts of Doctoral Dissertations, Pennsylvania State College, State College, Pennsylvania.

(C.S....) Abstracts of Field Studies for Degree of Doctor of Education, Colorado State College of Education, Greeley, Colorado.

Positive microfilm copies of the complete manuscript of any of these titles may be had at 1 1/4¢ per page, or paper enlargements, 8½ x 11 inches accommodating two pages each, at 10¢ per page, from University Microfilms, Ann Arbor, Michigan. Order should be made by Publication Number, and Title.

### CHEMISTRY

The pyrolysis of sodium salts of alpha-substituted acids. Duane L. Green, Ph.D. Thesis; Pennsylvania State, 1945. pp. 111, Pub. No. 779, (P.S. 1945, Vol. VIII).

CHEMISTRY

- I. The synthesis of halogen compounds of pentaerythritol
- II. The zinc reduction of pentaerythrityl tetrabromide
- III. The synthesis of cyclobutanone.  
Carl Peter Krimmel, Ph.D. Thesis; Pennsylvania State, 1945. pp. 163, Pub. No. 780, (P.S. 1945, Vol. VIII).
- I. The effect of cyclization on physical properties in the  $C_{14}$  range.
- II. The effect of the anthracene system on physical properties.
- III. Miscellaneous.  
Anton William Rytina, Ph.D. Thesis; Pennsylvania State, 1945. pp. 207, Pub. No. 781, (P.S. 1945, Vol. VIII).
- I. Mixtures of higher hydrocarbons.
- II. Generation of hydrogen bromide and preparation of alkyl bromides.
- III. The synthesis and properties of heavy hydrocarbons.
- IV. Modification of the Wolff-Kishner reaction.  
Robert W. Schiessler, Ph.D. Thesis; Pennsylvania State, 1945. pp. 189, Pub. No. 782, (P.S. 1945, Vol. VIII).
- I. The alpha silicon effect.
- II. The beta and gamma silicon effects. Beta and gamma fission  
Leo Harry Sommer, Ph.D. Thesis; Pennsylvania State, 1945. pp. 164, Pub. No. 783, (P.S. 1945, Vol. VIII).
- Synthetic antimalarials. Robert B. Taylor, Jr., Ph.D. Thesis; Pennsylvania State, 1945. pp. 153, Pub. No. 784, (P.S. 1945, Vol. VIII).
- The scattering of low-velocity hydrogen ions in ethylene and propylene. Lloyd C. Unger, Ph.D. Thesis; Pennsylvania State, 1945. pp. 78, Pub. No. 785, (P.S. 1945, Vol. VIII).
- Rearrangements of the bicyclic terpenes. Joseph D. C. Wilson, II, Ph.D. Thesis; Pennsylvania State, 1945. pp. 87, Pub. No. 787, (P.S. 1945, Vol. VIII).

ECONOMICS

The Mississippi Federated Cooperatives (AAL) its organization, functions and accomplishments. Ralph Lemuel Sackett, Ph.D. Thesis; Pennsylvania State, 1945. pp. 301, Pub. No. 786, (P.S. 1945, Vol. VIII).

EDUCATION

The relationship between college preparation and first year teaching experience of recent graduates of Western Michigan College, (Field Study No. 2.) Kenneth T. Bordine, Ed.D. Thesis; Colorado State College of Education, 1945. pp. 313, Pub. No. 774, (C.S. 1945, Vol. VII).

Reorganization of school administrative units and attendance areas in four Nebraska counties, (Field Study No. 2). Louis A. Bragg, Ed.D. Thesis; Colorado State College of Education, 1945. pp. 246, Pub. No. 775, (C.S. 1945, Vol. VII).

A continuation of curriculum studies in the social sciences and citizenship; Part III, An evaluation of the social studies, (Field Study No. 3.) Oscar A. DeLong, Ed.D. Thesis; Colorado State College of Education, 1945. pp. 165, Pub. No. 776, (C.S. 1945, Vol. VII).

Relationship between speech education and student personnel services, (Field Study No. 2.) William Valentine O'Connell, Ed.D. Thesis; Colorado State College of Education, 1945. pp. 95, Pub. No. 777, (C.S. 1945, Vol. VII).

A survey of the socio-economic status of transient and non-transient pupils on the elementary level, (Field Study No. 1.) Hendley Varner Williams, Jr., Ed.D. Thesis; Colorado State College of Education, 1943. pp. 140, Pub. No. 778, (C.S. 1945, Vol. VII).

EDUCATION AND PSYCHOLOGY

A psychometric study of non-intellectual factors in college achievement. Henry Borow, Ph.D. Thesis; Pennsylvania State, 1945. pp. 348, Pub. No. 788, (P.S. 1945, Vol. VIII).

EDUCATION AND PSYCHOLOGY

The reading grade placement of the first twenty-three books awarded the John Newberry Prize. Leo R. Miller, Ed.D. Thesis; Pennsylvania State, 1945. pp. 224, Pub. No. 789, (P.S. 1945, Vol. VIII).

An evaluation of a workshop program for in-service teacher education. S. June Smith, Ed.D. Thesis; Pennsylvania State, 1945. pp. 119, Pub. No. 790, (P.S. 1945, Vol. VIII).

The law and education for minority groups in seventeen southern states. Harold Dodson Weaver, Ed.D. Thesis; Pennsylvania State, 1945. pp. 187, Pub. No. 791, (P.S. 1945, Vol. VIII).

FUEL TECHNOLOGY

Petrographic characteristics and plastic and carbonizing properties of Chilean coals. Americo Albala, Ph.D. Thesis; Pennsylvania State, 1945. pp. 287, Pub. No. 792, (P.S. 1945, Vol. VIII).

PHYSICAL EDUCATION

Physical education in the elementary curricula of the Pennsylvania State Teachers Colleges. Maloise Sturdevant Dixon, Ed.D. Thesis; Pennsylvania State, 1945. pp. 388, Pub. No. 793, (P.S. 1945, Vol. VIII).

PSYCHOLOGY

Existent statutory provisions for special education in the public schools of the United States in 1944. Agnes K. Garrity, Ed.D. Thesis; Pennsylvania State, 1945. pp. 1002, Pub. No. 794, (P.S. 1945, Vol. VIII).

A study of the differentiating values of certain personality measures applied to a student and registered nurse population. Harold Curtis Reppert, Ph.D. Thesis; Pennsylvania State, 1945. pp. 83, Pub. No. 795, (P.S. 1945, Vol. VIII).

A study of the conditional type question. Douglas G. Schultz, Ph.D. Thesis; Pennsylvania State, 1945. pp. 138, Pub. No. 796, (P.S. 1945, Vol. VIII).

